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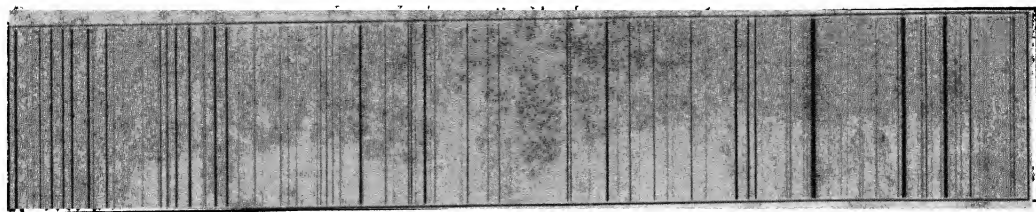
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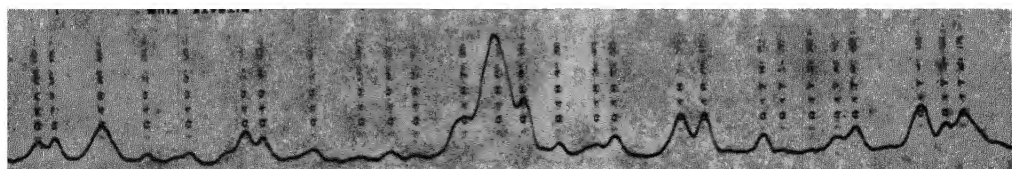
TABLES OF WAVELENGTHS



Section of a typical complex spectrum at high dispersion.



Automatic computing and recording comparator, used for determining wavelengths of spectrum lines.



Section of a typical record from the automatic comparator.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

WAVELENGTH TABLES

with

INTENSITIES IN ARC, SPARK, OR
DISCHARGE TUBE

of more than

100,000 SPECTRUM LINES

Most Strongly Emitted by the Atomic Elements under
Normal Conditions of Excitation

BETWEEN 10,000 Å. AND 2000 Å.
arranged in order of decreasing wavelengths

MEASURED AND COMPILED UNDER THE DIRECTION OF

GEORGE R. HARRISON
Professor of Physics

BY STAFF MEMBERS OF THE SPECTROSCOPY LABORATORY
OF THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

assisted by the
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TABLES OF WAVELENGTHS AND INTENSITIES OF THE PRINCIPAL ATOMIC SPECTRUM LINES IN THE RANGE 10,000—2000 Å.

INTRODUCTION

THE main tables in this volume contain 109,275 entries, giving the wavelength, the intensity in arc, spark, or discharge tube, the stage of ionization of the parent atom when the line has been classified in a term array, and the wavelength authority, for each of the most important known spectrum lines emitted between 10,000 and 2000 angstroms by atoms in the first two stages of ionization.

Though the tables include only half of the known spectrum lines in the region covered, the lines listed account for 99% of the radiation emitted by atoms in this range of wavelengths. Except as noted below, all known atomic lines which have intensity 2 or more on a scale of 1 to 9000 have been included. In addition, 1381 band heads which frequently appear on spectrograms have been included for convenience in identifying impurities.

Lines not found in the tables have been omitted for one or more of the following reasons:

(1) Because, under ordinary conditions of excitation in arc, spark, or discharge tube they are not sufficiently intense to warrant inclusion.

(2) Because they are known (from actual term classification) to originate from atoms with two or more electrons removed, i.e., from the III, IV, or higher spectra.

(3) Because they would not, with ordinary equipment, be resolved from some line of the same element which has been included.

(4) Because, although we have observed them and measured their wavelengths, they have not been listed by previous inves-

tigators. We have, however, included a number of lines of short wavelengths not previously given in the literature, with element assignments which are purely tentative. Such lines are designated with an a in the remarks column (R).

All wavelengths are given in terms of the International Angstrom unit (Å), as adopted by the International Astronomical Union. The element symbols used are listed in Table I, which gives also the number of lines included for each element. Responsibility for assignment of a line to a particular element rests entirely with previous investigators, except in cases designated a. The numerals I or II in the element column indicate that the line has been classified in a term array and definitely assigned to the normal atom (I) or to the singly ionized atom (II). In many cases, of course, a line can be assigned to a definite stage of ionization merely on the basis of excitation in various sources; but such indications have not been considered here, so that the presence of a Roman numeral after an element designation may be taken as an indication that the line has been classified.

All wavelengths marked with a dash in the R column are from our own determinations, and such values have been included for more than 75,000 lines. In cases where we have not used our own values we have usually chosen from the literature that value which we consider most trustworthy. Each two-letter symbol in the R column refers to the authority or authorities responsible for the wavelength value of the entry; authors and publications can be determined by means of Table V. In a few cases

PREPARATION OF THE TABLES

Intensity estimates in the spark column are for a standard-type 20,000-volt condensed spark between electrodes separated by about 5 mm. Intensities in brackets are for lines emitted in discharge tubes of various kinds, such as Geissler tubes and hollow cathode discharge tubes.

All intensities have been estimated on an expanded scale, based somewhat on those used in recent years by such investigators as A. S. King and W. F. Meggers. Lines taken from the literature have been brought to our intensity scale by suitable approximate conversion factors determined by interpolation from known lines.

The symbols used in the intensity column are in most cases identical with those adopted by the Wavelength Commission of the International Astronomical Union, and are explained in Table II, which, for convenience, is repeated at the end of the book.

It was our original intention to include wavenumbers for all lines, but we have been dissuaded from this by the following considerations:

(1) The tables are designed principally for use in spectroscopic analysis of materials and for identifying impurities, and wavenumbers are seldom needed for this purpose.

(2) It was found that the bulkiness of the volume could be decreased considerably by omitting wavenumbers.

(3) The resulting decrease in production costs made possible inclusion of nearly 10,000 additional entries beyond the 100,000 originally projected, with only slight increase in bulk.

(4) When the dispersion of air has been determined more precisely (especially at short wavelengths) the factors used in converting wavelengths in air to wavenumbers in vacuum can be expected to change. Therefore the wavenumbers of most lines, whether their wavelength values are further improved or not, can be expected to change within the next few years, so that

the wavenumber values given would soon be out of date.

TABLE II

Symbols Used in Wavelength Tables
(For author symbols in remarks column, see page xxiv)

a	new lines (not in literature), element assignments tentative
bh	band head
d	double line
h	hazy, diffuse, nebulous
I	interferometer measurement, mean value, unless with author symbol
IS	international primary standard
l	shaded or displaced to longer wavelengths (asymmetrical)
L	literature value, for band heads
m	mean value
r	narrow self-reversal
R	wide self-reversal
s	shaded or displaced to shorter wavelengths (asymmetrical)
S	international secondary standard
w	wide or complex
W	very wide or complex
—	(in R column) M.I.T. measurement
[]	discharge-tube intensity
I	line classified as emitted by γ -normal atom
II	line classified as emitted by singly ionized atom

(5) We hope to include wavenumbers in such future improved wavelength tables as we may publish in which individual spectrum lines are listed together under the elements.

PREPARATION OF THE TABLES

THESE tables were originally compiled for our own use in a more extensive project of spectrum-line measurements. When the spectrum of an element is being studied exhaustively for classification purposes, one of the most tedious processes is the elimination of chance lines which do not arise from the element in question. Routine methods can be used for the elimination of possible Rowland and Lyman ghosts and for sorting

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WAVELENGTH TABLES

out lines from different orders; but for weeding out lines from impurity elements much more extensive tables than have been available previously are desirable, with all lines arranged together in order of wavelength. It soon became evident that before much progress could be made in improving the descriptions of the spectra of individual elements a set of such tables was needed.

Accordingly, we combed the literature for all previous wavelength measurements on atomic lines, and copied on each of 250,000 white cards data for one line. When a line had been studied by several authors the measurements were all listed together on one card. Then, to check this first catalog, a second similar catalog was prepared on 250,000 buff cards, and the two catalogs were intercompared and finally corrected from the literature.

All measurements which we made on lines were entered on work sheets; and when from 7 to 50 measurements had been recorded for a given line these were averaged, and the average value was put at the tops of the two proper cards as our value for that line. Whenever our values agreed acceptably with the values given in the literature the cards were placed in the final catalogs; when the values did not agree, new spectrograms were made and from 7 to 20 new measurements were made on the uncertain lines. Usually the disagreement was then resolved; but in cases where it was not, a third set of measurements was made from new plates, when possible. In some cases we found that three independent sets of our measurements on a line would agree to within 0.003\AA while departing by as much as 0.04\AA from a value given to seven figures in the literature. In such cases we have inserted our own value when we felt sure that we were measuring the proper line; when we could not be sure we have used the literature value and held our own for further study.

To prepare the present catalog, data for the 110,000 strongest lines were copied on green cards from the main catalogs, and

these green cards were then arranged in order of diminishing wavelengths. The white cards were left in order of wavelengths under each element, while the buff cards were arranged in order of wavelengths for all elements together. These two larger catalogs are now available in the form of cards filed in index boxes; the publication of either is not contemplated until considerable spectroscopic work can be done to add to their completeness and accuracy.

Since we have included here no lines not listed in the literature (except a few at short wavelengths, marked a), the present tables must be considered as incomplete, for the number of lines listed for each element is still largely determined by the amount of time that has been devoted to study of its spectra. This is shown by comparing indium, for example (which has been studied very exhaustively in the hollow cathode discharge by Paschen and his co-workers), with such similar elements as gallium and thallium.

Examination of the tables shows many cases where two or more lines from different elements have wavelengths which differ by less than the expected experimental error. In most cases the various lines involved are real; in a few, however, it seems probable that only one line is involved, this having been assigned incorrectly to one or more atoms. For example, the three lines 2639.24 \AA Se - [5] Bi; 2639.17 \AA Te - [5] Bi; 2639.14 \AA S - [8] Bi may well all be the same sulphur line, though this cannot be proved without further experimentation. Since the arrangement of the tables makes such cases obvious, it has seemed desirable to avoid the responsibility of attempting to resolve them until further work has been done.

In almost every element having a complex spectrum we have found thousands of unlisted lines, most of them, to be sure, having intensities which would make their inclusion in these tables questionable. Even moderately strong lines of this sort have not been included, however, because of the

necessity of taking further spectrograms of arcs in various atmospheres, to avoid the danger of mistaking band lines for atomic lines. The lines marked *a* have been selected from spectrograms on which no band structures could be observed; we decided to include such lines in the range 2400 to 2000 Å even when element assignments could be only tentative, because the recent great increases in the sensitivity of emulsions and the reflecting power of gratings in this region make visible thousands of strong lines not previously studied.

PRECISION OF WAVELENGTHS

WHERE an intensity entry is given in the arc column with a dash in the R column, the wavelength recorded, if less than 4500 Å, is that observed in the standard Pfund arc sufficiently far from each electrode (7 mm) to avoid pole effect. For wavelengths greater than 4500 Å it is necessary to use a short arc to bring out a majority of the lines, and pole-effect shifts are less likely to occur. Since the wavelength of a line observed in a spark is much more variable than its wavelength observed in an arc, spark wavelengths have been listed only in cases where no intensity is entered either in the arc column or in brackets. Where the only intensity entry is in brackets in the spark column, the wavelength is that observed in a discharge tube. Discharge-tube wavelengths can be expected to be most consistent, arc wavelengths somewhat less so, and spark wavelengths least consistent.

Wavelengths which should be viewed with most suspicion are those (1) given to three figures after the decimal, if longer than 4500 Å or shorter than 2500 Å; (2) arising from elements with simple spectra; (3) belonging to rare earths of especial rarity; (4) belonging to elements having wide fine-structure patterns.

In cases where two widely differing values were given to three figures in the literature, and our value agreed with neither, the last digit has been dropped in the value given.

Our value was then retained if it lay between the other two, while a mean was used, marked *m*, if it did not.

Wavelengths given to three figures after the decimal are supposedly correct to within ± 0.005 Å, those given to two figures to within ± 0.05 Å, and those given to one figure to within ± 0.5 Å. Actually these tolerances are only approximate, for the precision obtainable varies greatly with the natural breadth of the line, its simple or complex structure, its variability under different conditions of excitation, the region of the spectrum in which it lies, and numerous other factors which are difficult to evaluate. In certain elements, such as cerium, we have had no difficulty in obtaining measurements the majority of which seldom deviated more than ± 0.003 Å from the mean, while the final average values were consistent with each other to within 0.0016 Å, as shown by application of the combination principle. Some other elements, whose lines in the same region were measured and tested by the same methods, showed far less self-consistency and reproducibility. For this reason the tables probably contain many wavelengths which are exact to the last figure, and others given to seven figures in which variation in different sources may be as great as 0.01 Å or more.

Where only two figures are given after the decimal, however, in only a few cases outside of the infrared and far ultraviolet should our measurements be found in error as much as the allowed .05 Å. Where only one figure is given after the decimal the wavelengths have been rounded off (1) because of low precision of measurements in the infrared; (2) because the line is extremely broad or extremely variable, so that more precise values have little meaning; or (3) because, in the case of band heads, interference from these can be expected at some distance to each side of the wavelength given.

For many spectroscopic purposes, the shorter the wavelength the more important is wavelength precision. If one desires to

WAVELENGTH TABLES

know the wavenumber of a line to within 0.02 cm^{-1} for line-classification purposes, the wavelength must be known with the following approximate precisions:

At 10,000 Å, to within 0.02 Å	
6,000 Å	0.007 Å
3,000 Å	0.002 Å
2,000 Å	0.0008 Å

With large spectrographs, and for wavelengths greater than 2500 Å, this variation in required precision is fairly well matched experimentally; for lines of similar shape are often narrower at shorter wavelengths, the linear resolution of optical equipment usually increases as the wavelength decreases, and lines of short wavelength can be measured in higher orders of diffraction-grating spectrographs than can those of long wavelength. At wavelengths shorter than 2500 Å a reverse trend begins with large gratings, because of overlapping of orders, decline in reflecting power, and the lower sensitivity of photographic emulsions; the latter effect has, however, recently been partially offset by improved types of emulsions.

THE INTENSITY SCALE

IT WAS our original purpose to base all intensity values on microdensitometer curves obtained when the plates were run through an automatic comparator. While this method can be used to obtain an excellent measure of the relative intensities of two lines photographed close together on the same plate, it gives results of little meaning when extended to cover the entire spectrum range. This is because of the wide variation in the sensitivities of the photographic emulsions available, in their development, and in the excitation conditions of sources. It would, of course, be possible to make exact measurements by means of photographic photometry, calibrating and standardizing all plates and determining true atomic-transition probabilities for the lines. While such results have great value

for many purposes (and we are engaged in a systematic program of such determinations), we have become convinced that such data would be of much less value in the present tables than are approximate intensity estimates made on a fairly consistent scale.

Spectroscopists have shown increasing inclination in recent years to expand the scale of their intensity estimates from the familiar 10 to 1 scale (which often trailed off through a series of "afterthought estimates," such as 0.00, etc.) to a wider scale, with intense lines being rated as 5000 or more. Such a scale lies much closer to the true intensities of the lines; for example, the sodium D lines near 5893 Å, marked 10 in many old tables, are actually at least 10,000 times as intense as many lines judged as of intensity 1. Both absolute and relative intensities of the lines can be expected to vary with the source and equipment used, and any intensity determinations are of use in such tables merely as approximate indications of the relative intensities of the lines.

While we have had density traces of spectrograms available, we have preferred to base the intensities given in these tables on eye estimates of the lines made by observing them on a screen. Then, after lines of all elements in a given region of the spectrum had been estimated on a fairly uniform scale, all intensity values were multiplied by a factor designed to bring the various spectrum regions into a smooth relationship. This was, of course, very difficult, and many incongruities will doubtless be noted. There seems to be no exact solution to the problem, for the densities obtained depend greatly on the emulsions used in reproducing the lines, while the true intensities will depend on the excitation conditions in the source used. Therefore all intensities should be taken merely as rough approximations.

In the case of lines taken from the literature, we have adjusted the intensity values to fit our scale as best we could. Therefore responsibility of an author for a particular entry should be taken as extending to the

wavelength value and to the element assignment, but not to the intensity values.

Again, intensities in the arc and spark columns sometimes show incongruities because of variations in exposure conditions and the vagaries of intensity estimation. In many cases, for example, lines known to arise from the ionized atom will be listed as having higher intensities in the arc than in the spark. This often occurs because the spark plates were for some reason weaker than the arc plates.

We have given the most intense lines the rating 9000 (to avoid use of more than four digits) and have used the value 1 for the weakest lines which have been observed. (These weak lines have been omitted from the tables in all cases except for a few lines of iron.) Lines of intermediate intensity have been given 25 different values. The advantage of such a scale is not that the values are given to any greater precision than would be possible on a uniform scale of, say, 1 to 25, but that they are closer approximations to the true intensities.

Increase in the sensitivity of the emulsions used in photographing wavelengths longer than 5000 Å has resulted in the use of much higher intensity ratings in this region than were common a few years ago. Though we have tried to keep all intensities on as uniform a scale as possible, it appears that the expansion of the scale in the infrared may have been overdone.

A few important lines of the rare earths will be found listed as weak in the tables because they do not appear with great intensity in the arc, spark, or discharge tube, but only in the electric furnace.

APPARATUS AND METHODS

MORE than ten thousand 2 x 20 inch and 4 x 16 inch spectrograms have thus far been taken in the course of our main wavelength project, using five large diffraction-grating spectrographs. These spectrographs involve (1) a six-inch aluminum-on-glass grating of

165,000 lines in a 35-foot modified Paschen mounting; (2) a six-inch aluminum-on-glass grating of 170,000 lines in a 34-foot modified Rowland mounting; (3) a six-inch aluminum-on-glass grating of 120,000 lines and 35-foot radius in a stigmatic Wadsworth mounting, used mostly in the range 2500–1960 Å; (4) a seven-inch aluminum-on-glass 35-foot grating of 90,000 lines in a stigmatic Wadsworth mounting, used mostly for the infrared; (5) a six-inch speculum metal grating of 180,000 lines and 21-foot radius, mounted in vacuum for the range 2000–500 Å. All gratings had either 30,000 or 15,000 lines per inch and were ruled by Professor R. W. Wood at Johns Hopkins University. The dispersions used varied between 0.33 Å/mm and 3.3 Å/mm, the latter value being used only in the infrared.

Most of the plates obtained have been measured at least twice on one or both of two automatic computing and recording comparators. During the first year of the project all measurements were made on a 16-inch comparator obtained from the Société Genevoise, which we fitted with an attachment for computing wavelengths by automatic interpolation between iron standard lines, and for recording them directly on motion-picture film.¹ When this device had been put into satisfactory operation a new comparator was built in the laboratory shops. This has a carriage which will give 25 inches of uninterrupted travel, controlled by a screw which is corrected to 1 micron, and is fitted also with an improved computing and recording mechanism.² When this second comparator had been put into routine operation the original comparator was rebuilt, a 27-inch screw being substituted for the 16-inch screw, and a new type of maximum-picker being installed for automatic setting on the spectrum lines at high speed. This is the instrument which, in a state of undress preliminary to its final testing, is shown in the frontispiece. With it

¹ G. R. Harrison, *Jour. Opt. Soc. Am.*, **25**: 169 (1935)

² G. R. Harrison, *Rev. Sci. Inst.*, **9**: 15 (1938)

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are sections of a spectrogram and of a record of intensities and wavelengths as obtained from the machine.

Though wavelengths are recorded to eight figures by the machines, only seven are kept, and there is, of course, some uncertainty in the seventh digit. Exhaustive tests have shown, however, that errors from other sources greatly outweigh errors introduced by the limitations of the machines.

The operation of the automatic maximum-picker has been improved to the point where the wavelengths of more than a thousand lines can be recorded in one minute without difficulty. The standard time in which a 20-inch plate is traversed is 120 seconds. To save time in loading the machine, a carriage has been provided on which three plates can be mounted together, with the proper starting line of each at a common fiducial mark. The density trace is recorded by photographing, on the same motion-picture film that records the wavelengths, the motion of the spot of a cathode-ray oscillograph which is controlled by the output of an electron-multiplier tube in accordance with the intensity of the light passing through the plate.

In the original maximum-picker¹ the peak of a spectrum line was determined in 0.006 second by measuring the voltage difference between two photoelectric cells which determined the densities of the plate at two positions separated by a distance equivalent to the linear resolution of the spectrograph. This method required that the two cells be balanced to within 0.1% at all light intensities, a condition somewhat difficult to achieve and maintain. To eliminate need for this, a delay network which gives the equivalent result with a single photocell was designed.³ The output of the electron multiplier which measures the light passing through the plate is divided by this network into two parts, one of which is in phase with the original current and the other delayed by 0.014 second. The plate is then moved across the scanning light beam

at a speed such that 0.014 second is required to traverse a distance along the plate equal to the linear resolution of the spectrograph. The difference between the two currents is then applied, after amplification, to a circuit which flashes a recording lamp whenever this current falls to zero while the density has a value slightly greater than that of the background of the spectrogram. Thus the reading of the rapidly rotating wavelength dial is photographed at the proper instant. To compensate for the electrical delay of 0.007 second, an equivalent mechanical delay is introduced by the machine.

To eliminate small residual wavelength displacements which may result because currents from spectrum lines of different intensities have different wave forms which pass through the network differently, automatic measurements from two runs made in opposite directions are always averaged. The problem of designing a network which will attenuate and delay equally all frequencies contained in the electrical record of a spectrogram is a difficult one to solve cheaply, and small residual errors have been found to arise from such distortion; but the averaging process apparently eliminates them.

Since it is rather difficult to set a plate on the machine exactly to within 0.001 Å of any standard line, we have found it convenient to make this setting only approximate (to within ± 0.01 Å) and then to correct the last digit of the recorded wavelength values by the same amount that the standard lines are found to be incorrect. This correction could be made automatically, but thus far we have found it most convenient to make this correction when the wavelengths and intensities are being transcribed from the films to the record books or cards.

All plates have been measured by hand setting as well as by automatic setting. When setting by hand the operator observes the spectrum projected on a screen before

¹ To be described in papers expected to be published late in 1939.

him, and when he has set the desired line on a fiducial mark, presses a key to record the wavelength. This process, though considerably slower than automatic recording, is still twenty times as rapid as that commonly used.

We have found that measurements made with the automatic maximum-picker are more self-consistent than are hand settings, but we have used both methods to obtain additional checks on the precision of each. A few lines are missed by the automatic picker, especially when they lie on the wings of broad lines of great intensity. These lines the hand-set records supply, though good wavelength values can be obtained for missing lines directly from the automatic intensity trace.

Lines for which our values have been used in the tables have been measured at least twice on each of three plates, and the average number of measurements for each line is greater than ten. When average values for the lines were tabulated, the number of values included in the average, and the average deviation from the mean, were also tabulated. The letter A was used to indicate an average deviation of $\pm 0.001 \text{ \AA}$, B for $\pm 0.002 \text{ \AA}$, etc. Weightings of 24 C were not uncommon for narrow lines — 24 determinations with an average deviation of $\pm 0.003 \text{ \AA}$.

SOURCES OF ERROR

THE wavelength precision of our measurements has been limited by the following factors, arranged in the order of probable decreasing importance:

(1) The insufficiency of adequate wavelength standards in some spectral regions, particularly of standard lines of suitable intensities.

(2) The displacement on spectrograms of lines to be measured relative to standard lines.

(3) Displacements caused by strong neighboring lines or by blends with impurity lines or bands.

(4) The natural breadth of some lines,

and the complex structure of others. We have listed all complex lines as single unless their components were at least 0.1 \AA apart.

(5) Errors of coincidence, inadequately corrected for, where lines to be measured in one order were compared with standards in another order.

(6) Actual variations of wavelength with excitation conditions.

(7) Limited amounts of certain materials available for excitation to produce the lines.

(8) Incorrect identification of lines with lines given in the literature.

(9) Uncertainties of setting on line maxima.

(10) Comparator errors.

The largest errors undoubtedly come from inadequacy of the wavelength standards, with which we have found considerable difficulty in obtaining smooth correction curves at the high dispersions used in this work. Most of the International Secondary Standards of iron are lines of great intensity, separated in the spectrum more widely than is desirable, and entirely absent in certain regions of the spectrum. At wavelengths shorter than 2500 \AA and at those longer than 7000 \AA we have used as standards the interferometer measurements on iron lines made by Meggers and Humphreys, and at short wavelengths, the copper standards of Shenstone.

Large systematic errors can be introduced by incorrect registration of standard lines on the spectrograms. Strictly speaking, standards of wavelength should be photographed at the same time and from the same source as the lines to be measured, if displacement between standards and other lines is to be avoided. This very desirable practice is sometimes not possible, however, either because the standards must be emitted by a special source which is not suitable for producing the desired lines to be measured, or because the lines to be measured would be obscured by lines of the standard, which must be present in profu-

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sion if they are to be useful with spectrographs of high dispersion.

When successive exposures to a spectrum to be measured and to a standard spectrum are made, though the plate remain undisturbed between the two exposures and the two sources are apparently similarly imaged on the grating, displacements as great as 0.02 \AA are sometimes found between the two spectra. The reasons for these shifts are not entirely understood, but they possibly arise from dissimilar illumination of the grating face, causing differences in line shape (especially in gratings with extreme target pattern) — or from temperature changes of the grating.

During the present work we have tried to eliminate such shifts by the following means: using measurements from at least three plates taken independently; taking standard exposures both before and after the exposure to be measured, half before and half after, so that any large intermediate shift would produce a noticeable broadening of the standard lines; using, when possible, a small amount of iron in the electrodes producing the lines to be measured, to give a few standard lines which could be used to determine any displacement between the actual standard lines and the spectrum under study.

Tests of our methods and equipment indicate that, where other conditions permit, measurements consistent to within 0.002 \AA are not difficult to make with large 10-meter gratings and automatic comparators. There are certain lines, however, which one is hardly justified in measuring with equipment which is designed primarily for making measurements on a "wholesale" basis; such lines are those whose wavelengths shift markedly with conditions, those of comparatively great breadth or dissymmetry, and those contained in spectra covering an extremely wide range in intensity. Elements in the first three columns and the first two rows of the Periodic Table are likely to emit lines of the last category. Fortunately these are just the elements

whose spectra have had most attention in the past; and while we have gone through a routine examination of their lines, we have been content, in most cases, to record the wavelength values obtained from the literature instead of our own. This is not to say that such spectra do not still merit careful study, but it is of the sort which is best given by an experienced spectroscopist to one element at a time. Our attention has been concentrated more on the complex atoms which are responsible for three-fourths of the lines given in the tables.

It would have been desirable if, before the present catalog was published, all wavelengths in it could have been tested by means of the combination principle; but this would have delayed publication of the volume and necessitated much further work in classification of spectra. Though the catalog has been checked many times for mistakes of various sorts, many errors of omission and commission doubtless remain. To any authors whose measurements have been misquoted or incorrectly assigned we offer sincere apologies, and doubly so to any whose values may have been omitted unknowingly in favor of less correct values of our own. We have tried to follow the guiding principle that a much-needed set of tables could be compiled from measurements already available in the literature, and that while we were justified in trying to improve this by making measurements with improved apparatus, we should at all costs avoid any procedure which might make it worse. We present the catalog, not as a finished product, but as a preliminary compilation designed to improve the status of wavelength measurements and line assignments.

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To Dr. William F. Meggers, Chief of the Spectroscopy Section of the National Bureau of Standards and President of the Commission on Standards of Wavelength of the International Astronomical Union, we are greatly indebted for advice and encourage-

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ment throughout the preparation of these tables. Dr. Meggers and his colleague, Dr. C. C. Kiess, have not only supplied manuscript data which otherwise would not have been obtainable but have obligingly gone over the galley proofs and made many constructive suggestions.

Professor Walter E. Albertson has kindly furnished unpublished data on the spectrum of iridium, and Professor Dorothy W. Weeks has given us invaluable help with the iron spectrum.

We have been encouraged to complete the tables by several conversations regarding them with Geheimrat H. Kayser, whose encyclopedic works on spectroscopy are standard, and with Präsident F. Paschen, whose spectroscopic measurements and tables are world-renowned. It is a pleasure to acknowledge the benefit we have obtained from the kindly counsel of men of such vast experience.

The excellent appearance of the tables originates in large measure from the zealous co-operation of J. R. Killian, Jr., of the Technology Press.

The wavelength project, from the results of which the measurements included herein have been selected, has been under way for about three years, and several successive groups of graduate students, whose names are included in the lists given below, have been connected with it. The following persons have been responsible for the measurements and for the present compilation:

For the staff organization of the project and supervision of its detailed operation, Colonel Robert C. Eddy of the Massachusetts Institute of Technology.

For assisting the undersigned in the final checking and editing of the material included in the tables: Dr. Nathan Rosen and Dr. George O. Langstroth.

As supervisors of laboratory assistants for periods of three months or longer: Dr. Peter A. Cole, Dr. Richard E. Evans, Dwight P. Merrill, Julius P. Molnar, Norman J. Oliver, Dr. Fred W. Paul, Henry Rich.

As supervisors of clerical assistants for periods of three months or longer: John B. D'Albora, Dr. Harriet W. Allen, William W. Bartlett, Mildred H. Brode, Harold E. Clearman, Jr., Leonard J. Julian, Dr. Joseph Morgan, Simeon I. Rosenthal, Helen Wigglesworth.

In charge of the checking of galley and page proofs: Clinton H. Colleser.

The great burden of numerical tabulation and checking has rested on a very faithful group of selected W.P.A. workers. Though they cannot be mentioned individually because of their numbers, the project would have been impossible of completion without their conscientious work.

Pure chemicals for the production of spectra were purchased with several grants from the Rumford Fund of the American Academy of Arts and Sciences, which aid is hereby gratefully acknowledged.

A large portion of the personnel for the operation of the project and a considerable amount of materials were furnished by the Works Progress Administration for Massachusetts, under Official Projects Nos. 165-14-6999-0, 465-14-3-149, and 665-14-3-54.

Scientific staff, housing, apparatus, and financial support for obtaining data and for underwriting publication of the tables were furnished by the Massachusetts Institute of Technology, to whose administrative officers our best thanks are due.

GEORGE R. HARRISON

Cambridge, Massachusetts
June 10, 1939

TABLE III

SENSITIVE LINES OF THE ELEMENTS *

Wave-length	Excitation Potential†	Intensities Arc Spk., [Dis]	Sensitivity‡	Wave-length	Excitation Potential†	Intensities Arc Spk., [Dis]	Sensitivity‡	Wave-length	Excitation Potential†	Intensities Arc Spk., [Dis]	Sensitivity‡
A 18 Argon				Br 35 Bromine				Cs 55 Caesium			
8115.311	13.0	- [5000]	U2	4816.71	14.4	- [300]	V3	2855.676	12.5	60 200 wh	V4
7503.867	13.4	- [700]	U4	4785.50	14.4	- [400]	V2	2849.838	12.6	80 150 r	V3
7067.217	13.2	- [400]	U3	4704.86	14.4	- [250]	V1	2843.252	12.6	125 400 r	V2
6965.430	13.3	- [400]	U3					2835.633	12.6	100 400 r	V1
Ag 47 Silver				C 6 Carbon				Cu 29 Copper			
5465.487	6.0	1000 R 500 R	U4	4267.27	32.1	- 500	V2	8943.50	1.4	2000 R	U2
5209.067	6.0	1500 R 1000 R	U3	4267.02	32.1	- 350	V3	8521.10	1.4	5000 R	U1
3382.891	3.6	1000 R 700 R	U2	2837.602	27.5	- 40	V5	4593.177	2.7	1000 R 50	U4
3280.683	3.8	2000 R 1000 R	U1	2836.710	27.5	- 200	V4	4555.355	2.7	2000 R 100	U3
2437.791	17.4	60 500 wh	V2	2478.573	7.7	400 [400]	U2				
2246.412	17.8	25 300 hs	V3	2296.89	53.5	- 200	-				
Al 13 Aluminum				Ca 20 Calcium				Dy 66 Dysprosium			
6243.36	21.0	- 100	V3	4454.781	4.7	200	U2	5218.202	6.2	700	U3
6231.76	21.0	- 30	-	4434.960	4.7	150	U3	5153.235	6.2	600	U4
3961.527	3.1	3000 2000	U1	4425.441	4.7	100	U4	5105.541	3.8	500	U5
3944.032	3.1	2000 1000	U2	4226.728	2.9	500 R 50 W	U1	3273.962	3.8	3000 R 1500 R	U2
3092.713	4.0	1000 1000	U3	3968.468	9.2	500 R 500 R	V2	3247.540	3.8	5000 R 2000 R	U1
3082.155	4.0	800 800	U4	3933.666	9.2	600 R 600 R	V1	2246.995	15.9	30 500	V3
2816.179	17.7	10 100	V2	3179.332	13.1	100 400 w	V3	2192.260	16.2	25 500 h	V2
2689.166	10.6	3 100	V1	3158.869	13.1	100 300 w	V4	2135.976	16.2	25 500 w	V1
2631.553	21.2	- 40	-								
As 33 Arsenic				Cb 41 Columbium				Er 68 Erbium			
2898.71	6.7	25 r 40	-	4137.095	3.0	100 60	U5	4211.719	>2.9	200 15	-
2860.452	6.6	50 r 50	-	4123.810	3.0	200 125	U4	4167.966	>3.0	50 12	-
2780.197	6.7	75 R 75	U5	4100.923	3.1	300 w 200 w	U3	4077.974	>3.0	150 r 100	-
2456.53	6.5	100 r 8	U4	4079.729	3.1	500 w 200 w	U2	4045.983	>3.0	150 12	-
2370.77	6.7	50 r 3	-	4058.938	3.2	1000 w 400 w	U1	4000.454	>3.1	400 300	-
2369.67	6.7	40 r	-	3225.479	>7.6	150 w 800 wr	-				
2349.84	6.6	250 R 18	U3	3194.977	>7.7	30 300	-				
2288.12	6.7	250 R 5	U3	3163.402	>7.8	15 8	-				
				3130.786	>7.9	100 100	-	3906.316	>3.2	25 12	-
				3094.183	>8.0	100 1000	V1	3692.652	>3.4	20 12	-
								3499.104	>3.5	18 15	-
Au 79 Gold				Cd 48 Cadmium				Eu 63 Europium			
2802.19	>13.6	- 200	-	6438.4696	7.3	2000 1000	-				
2675.95	4.6	250 R 100	U2	6110.510	7.3	1000 500	-	4205.046	8.6	200 R 50	-
2427.95	5.1	400 R 100	U1	3466.201	7.3	1000 500	-	4129.737	8.6	150 R 50 R	-
				3403.653	7.3	800 500 h	-				
				3261.057	3.8	300 300	-				
				2748.58	19.2	5 200	-				
				2573.09	19.2	3 150	-				
				2312.84	20.1	1 200	-	6902.46	14.5	- [500]	U3
				2288.018	5.4	1500 R 300 R	U1	6856.02	14.4	- [1000]	U2
				2265.017	14.4	25 d 300	V2	5291.0	bh Ca F 200	-	-
				2144.382	14.7	50 200 R	V1				
				Ce 58 Cerium				Fe 26 Iron			
5777.665	3.8	500 R 100 R	U2	4186.599	>8.6	80 25	-	3748.264	3.4	500 200	U4
5535.551	2.2	1000 R 200 R	U1	4165.606	>8.6	40 6	-	3745.903	3.4	150 100	U5
5519.115	3.8	200 R 60 R	U3	4040.762	>8.7	70 5	-	3745.564	3.4	500 500	U3
5424.616	3.8	100 R 30 R	U4	4012.388	>8.7	60 20	-	3737.133	3.4	1000 r 600	U2
4934.086	7.7	400 h 400 h	V2					3719.935	3.3	1000 R 700	U1
4554.042	7.9	1000 R 200	V1					2413.309	13.1	60 100 h	V5
4130.664	10.9	50 r 60 wh	V3					2410.517	13.1	50 70 h	V4
3891.785	10.9	18 25	V4	4819.46	28.3	- [200]	V4	2404.882	13.0	50 100 wh	V3
3071.591	4.0	100 R 50 R	U5	4810.06	28.3	- [200]	V3	2395.625	13.0	50 100 wh	V2
2335.269	11.2	60 R 100 R	-	4794.54	28.3	- [250]	V2	2382.039	13.0	40 r 100 R	V1
2304.235	11.2	60 R 80 R	-								
				Co 27 Cobalt				Ga 31 Gallium			
3321.343	6.4	1000 r 30	U2	3529.813	4.0	1000 R 30	U3				
3321.086	6.4	100 r	U3	3465.800	3.6	2000 R 25	U2	4172.056	3.1	2000 R 1000 R	U1
3321.013	6.4	50	U4	3453.505	4.0	3000 R 200	U1	4032.982	3.1	1000 R 500 R	U2
3131.072	13.2	200 150	V2	3405.120	4.0	2000 R 150	-	2943.637	4.3	10 20 r	U3
3130.416	13.2	200 200	V1	2519.822	14.7	40 200	-	2874.244	4.3	10 15 r	U4
2650.781	7.4	25	U5	2388.918	14.1	10 35	-				
2348.610	5.4	2000 R 50	U1	2378.622	14.1	25 50 w	-				
				2363.787	14.2	25 50	-				
				2307.857	14.3	25 50 w	-				
				2286.156	14.3	40 300 l	V1				
4722.552	4.0	1000 100	-	Cr 24 Chromium				Gd 64 Gadolinium			
3067.716	4.0	3000 hR 2000 wh	U1	5208.436	3.3	500 R 100	U4	3768.405	>3.3	20 20	-
2989.029	5.5	250 wh 100 wh	-	5206.039	3.3	500 R 200	U5	3646.196	>3.4	200 w 150	-
2938.298	6.1	300 w 300 w	-	5204.518	3.3	400 R 100	U6				
2897.975	5.6	500 WR 500 WR	U2	4289.721	2.9	3000 R 800 r	U3				
2809.625	6.3	200 w 100	-	4274.603	2.9	4000 R 800 r	U2				
2780.521	5.8	200 w 100	-	4254.346	2.9	5000 R 1000	U1				
2276.578	5.4	100 R 40	-	2860.934	12.5	60 100	V5				
2061.70	6.0	300 R 100	-								
								Ge 32 Germanium			
								4226.570	4.9	200 50	U3
								3269.494	4.7	300 300	-
								3039.064	4.9	1000 1000	U2
								2709.626	4.6	30 20	-
								2651.575	4.7	30 20	-
								2651.178	4.8	40 20	-

* Compiled from a combination of empirical and theoretical data selected from the literature.

† For an ion, the ionization potential of the neutral atom has been included in the excitation potential to give an approximate idea of the excitation required to produce the line.

‡ For the neutral atom, the most sensitive line (rare ultimate) is indicated by U1, and other lines by U2, U3, etc., in order of decreasing sensitivity. For the singly ionized atom, the corresponding designations are V1, V2, etc. In cases where U1 is not given, the most sensitive lines lie outside the spectral range 10,000-2000 Å.

SENSITIVE LINES OF THE ELEMENTS

Wave-length	Excitation Potential†	Intensities Arc Spk., [Dis.]	Sensitivity‡	Wave-length	Excitation Potential†	Intensities Arc Spk., [Dis.]	Sensitivity‡	Wave-length	Excitation Potential†	Intensities Arc Spk., [Dis.]	Sensitivity‡
H 1 Hydrogen				Lu 71 Lutecium				Os 76 Osmium			
6562.79	12.0	- [3000]	U2	4518.57	>2.7	300 40	-	4420.468	2.8	400 R 100	-
4861.327	12.7	- [500]	U3	3554.43	>6.2	50 150	-	3267.945	3.8	400 R 30	-
He 2 Helium				3472.48	>6.3	50 150	-	3262.290	4.3	500 R 50	-
5875.618	23.0	- [1000]	U3	3397.07	>6.3	50 20 r	-	3058.66	4.0	500 R 500	-
4685.75	75.3	- [300]	-	2911.39	>6.9	100 300	-	2909.061	4.2	500 R 400	U1
3888.646	22.9	- [1000]	U2	2894.84	>7.0	60 200	-	P 15 Phosphorus			
Hf 72 Hafnium				Mg 12 Magnesium				2554.93	7.1	60 [20]	-
4093.161	>7.8	25 20	-	5183.618	5.1	500 wh 300	-	2553.28	7.1	80 [20]	U3
3134.718	>8.7	80 125	-	5172.699	5.1	200 wh 100 wh	-	2535.65	7.2	100 [30]	U2
3072.877	4.0	80 18	-	5167.343	5.1	100 wh 50	-	2534.01	7.2	50 [20]	-
2940.772	4.2	60 12	-	3838.258	5.9	300 200	U2	Pb 82 Lead			
2916.481	4.2	50 15	-	3832.306	5.9	250 200	U3	5608.8	16.9	- [40]	V2
2904.408	4.8	30 6	-	3829.350	5.9	100 w 150	U4	4057.820	4.4	2000 R 300 R	U1
2898.259	4.6	50 12	-	2852.129	4.3	300 R 100 R	U1	3683.471	4.3	300 50	U2
2820.224	>9.2	40 100	-	2802.695	12.0	150 300	V2	3639.580	4.4	300 50 h	-
2773.357	>9.3	25 60	-	2795.53	12.0	150 300	V1	2833.069	4.4	500 R 80 R	-
2641.406	>9.5	40 125	-	Mn 25 Manganese				2614.178	>4.7	200 r 80	-
2516.881	>9.7	35 100	-	4034.490	3.1	250 r 20	U3	2203.505	14.7	50 W 5000 R	V1
2513.028	>9.7	25 70	-	4033.073	3.1	400 r 20	U2	2169.994	5.7	1000 R 1000 R	-
Hg 80 Mercury				4030.755	3.1	500 r 20	U1	Pd 46 Palladium			
5460.740	7.7	- [2000]	-	2605.688	12.2	100 R 500 R	V3	3634.695	4.2	2000 R 1000 R	U3
4358.35	7.7	3000 w 500	-	2593.729	12.2	200 R 1000 R	V2	3609.548	4.4	1000 R 700 R	-
4046.561	7.7	200 300	-	2576.104	12.2	300 R 2000 R	V1	3516.943	4.5	1000 R 500 R	-
3663.276	8.8	500 400	U5	Mo 42 Molybdenum				3421.24	4.6	2000 R 1000 R	U2
3654.833	8.8	- [200]	U4	3902.963	3.2	1000 R 500 R	U3	3404.580	4.4	2000 R 1000 R	U1
3650.146	8.8	200 500	U3	3864.110	3.2	1000 R 500 R	U2	2854.581	16.6	4 500 h	-
2536.519	4.9	2000 R 1000 R	U2	3798.252	3.3	1000 R 1000 R	U1	2658.722	16.9	20 300	-
Ho 67 Holmium				2909.116	11.6	25 40 h	V5	2505.739	17.5	3 30	-
3891.02	>3.2	200 40	-	2890.994	11.7	30 50 h	V4	2498.784	17.2	4 150 h	-
3748.17	>3.3	60 40	-	2871.508	11.7	100 100 h	V3	2488.921	16.3	10 30	-
2936.77	>7.4	- 1000 R	-	2848.232	11.8	125 200 h	V2	Pr 59 Praseodymium			
I 53 Iodine				2816.154	11.9	200 300 h	V1	4225.327	>2.9	50 40	-
5464.61	22.7	- [900]	-	N 7 Nitrogen				4189.518	>2.9	100 50	-
5161.188	22.8	- [300]	-	5679.56	35.1	- [500]	V2	4179.422	>3.0	200 40	-
2062.38	>16.4	- [900]	-	5676.02	35.0	- [100]	V4	4062.817	>3.0	150 50	-
In 49 Indium				5666.64	35.0	- [300]	V3	Pt 78 Platinum			
4511.323	3.0	5000 R 4000 R	U1	4109.98	13.7	- [1000]	U2	3064.712	4.0	2000 R 300 R	U1
4101.773	3.0	2000 R 1000 R	U2	4103.37	74.3	- [80]	-	2997.967	4.2	1000 R 200 r	-
3258.564	4.1	500 R 300 R	U5	4099.94	13.7	- [150]	U3	2929.794	4.2	800 R 200 w	-
3256.090	4.1	1500 R 600 R	U3	4097.31	74.3	- [100]	-	2830.295	4.4	1000 R 600 r	-
3039.356	4.1	1000 R 500 R	U4	Na 11 Sodium				2659.454	4.6	2000 R 500 R	U2
Ir 77 Iridium				5895.923	2.1	5000 R 500 R	U2	Ra 88 Radium			
3513.645	3.5	100 h 100	U2	5889.953	2.1	9000 R 1000 R	U1	4825.91	2.6	- [800]	U1
3437.015	4.4	20 15	-	5688.224	4.3	300 -	-	4682.28	7.8	- [800]	V2
3220.780	4.2	100 30	U1	5682.657	4.3	80 -	-	3814.42	8.4	- [2000]	V1
2924.792	4.2	25 wh 15	-	3302.988	3.7	300 R 150 R	U4	Rb 37 Rubidium			
2849.725	4.3	40 h 20 h	-	3302.323	3.7	600 R 300 R	U3	7947.60	1.6	5000 R -	U2
K 19 Potassium				Nd 60 Neodymium				7800.227	1.6	9000 R -	U1
7698.979	1.6	5000 R -	U2	4303.573	>2.9	100 40	-	4215.556	2.9	1000 R 300	U4
7664.907	1.6	9000 R -	U1	4177.321	>3.0	15 25	-	4201.851	2.9	2000 R 500	U3
4047.201	3.0	400 200	U4	3951.154	>3.1	40 30	-	Re 75 Rhenium			
4044.140	3.1	800 400	U3	Ne 10 Neon				4889.17	2.5	2000 w -	U2
Kr 36 Krypton				6402.246	18.5	- [2000]	-	3460.47	3.6	1000 W -	U1
5870.9158	12.1	- [3000]	U2	5852.488	18.9	- [2000]	-	Rh 45 Rhodium			
5570.2895	12.1	- [2000]	U3	5400.562	18.9	- [2000]	-	3692.357	3.3	500 hd 150 wd	-
La 57 Lanthanum				Ni 28 Nickel				3657.987	3.6	500 W 200 W	-
6249.929	2.5	300 -	U1	3524.541	3.5	1000 R 100 wh	-	3434.893	3.6	1000 r 200 r	U1
5930.648	2.2	250 -	U2	3515.054	3.6	1000 R 50 h	-	3396.85	3.6	1000 w 500	-
5455.146	2.4	200 1	U3	3492.956	3.6	1000 R 100 h	U2	3323.092	3.9	1000 200	-
4123.228	8.9	500 500	V4	3414.765	3.6	1000 R 50 wh	U1	Rn 86 Radon			
4077.340	8.9	600 400	V3	2287.084	14.8	100 500	V1	7450.00	8.5	- [600]	U2
3949.106	9.1	1000 800	V2	2270.213	14.2	100 400	V2	7055.42	8.4	- [400]	U3
Li 3 Lithium				2264.457	14.3	150 400	V3				
6707.844	1.8	3000 R 200	U1	2253.86	14.4	100 300	V4				
6103.642	3.9	2000 R 300	U3	O 8 Oxygen							
4603.00	4.5	800 -	U4	7775.433	10.7	- [100]	U4				
3232.61	3.8	1000 R 500	U2	7774.138	10.7	- [300]	U3				
				7771.928	10.7	- [1000]	U2				

† For an ion, the ionization potential of the neutral atom has been included in the excitation potential to give an approximate idea of the excitation required to produce the line.

‡ For the neutral atom, the most sensitive line (rare earths) is indicated by U1, and other lines by U2, U3, etc., in order of decreasing sensitivity. For the singly ionized atom, the corresponding designations are V1, V2, etc., in cases where U1 is not given the most sensitive lines lie outside the spectral range 10,000-2000 Å.

Wave-length	Excitation Potential†	Intensities Arc Spk., [Dis]	Sensi-tivity‡	Wave-length	Excitation Potential†	Intensities Arc Spk., [Dis]	Sensi-tivity‡	Wave-length	Excitation Potential†	Intensities Arc Spk., [Dis]	Sensi-tivity‡			
Ru 44 Ruthenium				Sr 38 Strontium				V 23 Vanadium						
3596.179	3.7	30	100	U3	4962.263	4.3	40	-	U4	4389.974	3.1	80 R	60 R	-
3498.942	3.5	500 R	200	U1	4872.493	4.3	25	-	U3	4384.722	3.1	125 R	125 R	-
3436.737	3.7	300 R	150	U2	4832.075	4.3	200	8	U2	4379.238	3.1	200 R	200 R	U1
2976.586	>10.5	60	200	-	4607.331	2.7	1000 R	50 R	U1	3185.396	3.9	500 R	400 R	U2
2965.546	>10.6	60	200	-	4305.447	11.6	40	-	-	3183.982	3.9	500 R	400 R	-
2945.668	>10.6	60	300	-	4215.524	8.6	300 r	500 W	V2	3183.406	3.9	200 R	100 R	-
2712.410	>11.0	80	300	-	4077.714	8.7	400 r	400 W	V1	3125.284	11.0	80	200 R	-
2692.065	>11.0	8	200	-	3474.887	12.2	80	50	-	3118.383	11.1	70	200 R	V4
2678.758	>11.0	100	300	-	3464.57	12.2	200	200	-	3110.706	11.1	70	300 R	V3
					3380.711	12.2	150	200	-	3102.299	11.1	70	300 R	V2
										3093.108	11.2	100 R	400 R	V1
S 16 Sulphur				Ta 73 Tantalum				W 74 Tungsten						
9237.49	7.8	-	[200]	U6	3406.664	>3.6	70 w	18 s	-	4302.108	3.2	60	60	U1
9228.11	7.8	-	[200]	U5	3318.840	>3.7	125	35	-	4294.614	3.2	50	50	U2
9212.91	7.8	-	[200]	U4	3311.162	>3.7	300 w	70 w	U1	4008.753	3.4	45	45	U3
4696.25	9.1	-	[15]	U9						3613.790	>9.2	10	30	-
4695.45	9.1	-	[30]	U8						3215.560	5.3	10	9	-
4694.13	9.1	-	[500]	U7						2589.167	>10.6	15 d	25	-
										2397.091	>10.9	18	30	-
Sb 51 Antimony				Tb 65 Terbium				Xe 54 Xenon						
3267.502	5.8	150	150 Wh	-	3874.18	>3.2	200	200	-	4671.226	10.9	-	[2000]	U2
3232.499	6.1	150	250 wh	-	3848.75	>3.2	100	200	-	4624.276	10.9	-	[1000]	U3
2877.915	5.3	250 W	150	-	3561.74	>3.5	200	200	-	4500.977	11.0	-	[500]	U4
2598.062	5.8	200	100	-	3509.17	>3.5	200	200	-					
2528.535	6.1	300 R	200	-										
2311.469	5.3	150 R	50	-	2769.67	5.8	-	[30]	-					
2175.890	5.7	300	40	U2	2530.70	5.5	-	[30]	-					
2068.38	6.0	300 R	3	U1	2385.76	5.8	600	[300]	U2					
					2383.25	5.8	500	[300]	U3					
					2142.75	5.8	60 R	-	-					
Sc 21 Scandium				Te 52 Tellurium				Yb 70 Ytterbium						
4023.688	3.1	100	25	U3						3987.994	>3.1	1000 R	500 R	-
4020.399	3.1	50	20	U4	4019.137	>3.1	8	8	-	3694.203	>3.3	500 R	1000 R	-
3911.810	3.2	150	30	U1	3601.040	>3.4	8	10	-	3289.37	>3.8	500 R	1000 R	-
3907.476	3.2	125	25	U2	3538.75	>3.5	-	50	-					
3642.785	10.0	60	50	V3	3290.59	>7.3	-	40 h	-					
3630.740	10.1	50	70	V2										
3613.836	10.1	40	70	V1										
Se 34 Selenium				Ti 22 Titanium				Yt 39 Yttrium						
4742.25	>2.6	-	[500]	U6	5007.213	3.3	200	40	-	4674.848	2.7	80	100	U1
4739.03	>2.6	-	[800]	U5	4999.510	3.3	200	80	-	4643.695	2.7	50	100	U2
4730.78	>2.6	-	[1000]	U4	4991.066	3.3	200	100	-	3788.697	9.9	30	30	-
2062.788	6.3	-	[800]	U3	4981.733	3.3	300	125	U1	3774.332	9.9	12	100	-
2039.851	6.3	-	[1000]	U2	3653.496	3.4	500	200	U2	3710.290	10.0	80	150	V1
					3642.675	3.4	300	125	-	3633.123	9.9	50	100	-
					3635.463	3.4	200	100	-	3600.734	10.1	100	300	-
					3383.761	10.4	70	300 R	-	3242.280	10.5	60	100	-
					3372.800	10.5	80	400 R	V3					
					3361.213	10.5	100	600 R	V2					
					3349.035	11.1	125	800 R	V1					
Si 14 Silicon				Tl 81 Thallium				Zn 30 Zinc						
3905.528	5.1	20	15 W	-	5350.46	3.3	5000 R	2000 R	U1	6362.347	7.7	1000 Wh	500	-
2881.578	5.1	500	400	U1	3775.72	3.3	3000 R	1000 R	U2	4810.534	6.6	400 W	300 h	-
2528.516	4.9	400	500	U2	3519.24	4.5	2000 R	1000 R	U3	4722.159	6.6	400 w	300 h	-
2516.123	4.9	500	500	U3	3229.75	4.8	2000	800	-	4680.138	6.6	300 w	200 h	-
2506.899	4.9	300	200	U4	2918.32	5.2	400 R	200 R	-	3345.020	7.8	800	300	U2
					2767.87	4.5	400 R	300 R	-	3302.588	7.8	800	300	U3
										3282.333	7.8	500 R	300	U4
										2557.958	15.3	10	300	V3
										2502.001	15.3	20	400 w	V4
										2138.56	5.8	800 R	500	U1
										2061.91	15.4	100	100	V2
										2025.51	15.5	200	200	V1
Sm 62 Samarium				Tm 69 Thulium				Zr 40 Zirconium						
4434.321	8.8	200	200	V2						4772.312	3.2	100	-	-
4424.342	8.9	300	300	V1	3761.917	>3.3	200	120	-	4739.478	3.2	100	-	-
4390.865	8.6	150	150	-	3761.333	>3.3	250	150	-	4710.075	3.3	60	-	-
					3462.21	>3.6	200	100	-	4687.803	3.4	125	-	U4
										3601.193	3.6	400	15	U1
										3572.473	10.4	60	80	V4
										3547.682	3.5	200	12	U2
										3519.605	3.5	100	10	U3
										3496.210	10.5	100	100	V3
										3438.230	10.6	250	200	V2
										3391.975	10.7	300	400	V1
Sn 50 Tin				U 92 Uranium										
4524.741	4.8	500 wh	50	-	4241.669	>2.9	40	50	-					
3262.328	4.8	400 h	300 h	U3	3672.579	>3.4	8	15	-					
3175.019	4.3	500 h	400 hr	-	3552.172	>3.5	8	12	-					
3034.121	4.3	200 wh	150 wh	-										
3009.147	4.3	300 h	200 h	-										
2863.327	4.3	300 R	300 R	U2										
2839.989	4.8	300 R	300 R	U1										

† For an ion, the ionization potential of the neutral atom has been included in the excitation potential to give an approximate idea of the excitation required to produce the line.

* For the neutral atom, the most sensitive line (raie ultime) is indicated by U1, and other lines by U2, U3, etc., in order of decreasing sensitivity. For the singly ionized atom, the corresponding designations are V1, V2, etc. In cases where U1 is not given, the most sensitive lines lie outside the spectral range 10,000-2000 Å.

TABLE IV
SENSITIVE LINES OF THE ELEMENTS
[arranged in order of wavelength]

Wave-length	Element	Arc	Intensities Spk., [Dis]	Sensi-tivity†	Wave-length	Element	Arc	Intensities Spk., [Dis]	Sensi-tivity†	Wave-length	Element	Arc	Intensities Spk., [Dis]	Sensi-tivity†
9237.49	S I	-	[200]	U6	4819.46	Cl II	-	[200]	V4	4123.228	La II	500	500	V4
9228.11	S I	-	[200]	U5	4816.71	Br II	-	[300]	V3	4109.98	N I	-	[1000]	U2
9212.91	S I	-	[200]	U4	4810.534	Zn I	400 w	300 h	-	4103.37	N III	-	[80]	-
8943.50	Cs I	2000 R	-	U2	4810.06	Cl II	-	[200]	V3	4101.773	Ln I	2000 R	1000 R	U2
8521.10	Cs I	5000 R	-	U1	4794.54	Cl II	-	[250]	V2	4100.923	Cb I	300 w	200 w	U3
8115.311	A I	-	[5000]	U2	4785.50	Br II	-	[400]	V2	4099.94	N I	-	[150]	U3
7947.60	Rb I	5000 R	-	U2	4772.312	Zr I	100	-	-	4097.31	N III	-	[100]	-
7800.227	Rb I	9000 R	-	U1	4742.25	Se I	-	[500]	U6	4093.161	Hf II	25	20	U2
7775.433	O I	-	[100]	U4	4739.478	Zr I	100	-	-	4079.729	Cb I	500 w	200 w	U2
7774.138	O I	-	[300]	U3	4739.03	Se I	-	[800]	U5	4077.974	Dy	150 r	100	-
7771.928	O I	-	[1000]	U2	4730.78	Se I	-	[1000]	U4	4077.714	Sr II	400 r	500 W	V1
7698.979	K I	5000 R	-	U2	4722.552	Bi I	1000	100	-	4077.340	La II	600	400	V3
7664.907	K I	9000 R	-	U1	4722.159	Zn I	400 w	300 h	-	4062.817	Pr	150	50	-
7503.867	A I	-	[700]	U4	4710.075	Zr I	60	-	-	4058.938	Cb I	1000 w	400 w	U1
7450.00	Rn I	-	[600]	U2	4704.86	Br II	-	[250]	V1	4057.820	Pb I	2000 R	300 R	U1
7067.217	A I	-	[400]	U3	4696.25	S I	-	[15]	U9	4047.201	K I	400	200	U4
7055.42	Rn I	-	[400]	U3	4695.45	S I	-	[30]	U8	4046.561	Hg I	200	300	-
6965.430	A I	-	[400]	U3	4694.13	S I	-	[500]	U7	4045.983	Dy	150	12	-
6902.46	F I	-	[500]	U3	4687.803	Zr I	125	-	U4	4044.140	K I	800	400	U3
6856.02	F I	-	[1000]	U2	4685.75	He II	-	[300]	-	4040.762	Ce II	70	5	-
6707.844	Li I	3000 R	200	U1	4682.28	Ra II	-	[800]	V2	4034.490	Mn I	250 r	20	U3
6562.79	H I	-	[3000]	U2	4680.138	Zn I	300 w	200 h	-	4033.073	Mn I	400 r	20	U2
6438.4696	Cd I	2000	1000	-	4674.848	Yt I	80	100	U1	4032.982	Ga I	1000 R	500 R	U2
6402.246	Ne I	-	[2000]	-	4671.226	Xe I	-	[2000]	U2	4030.755	Mn I	500 r	20	U1
6362.347	Zn I	1000 Wh	500	-	4643.695	Yt I	50	100	U2	4023.688	Sc I	100	25	U3
6249.929	La I	300	-	U1	4624.276	Xe I	-	[1000]	U3	4020.399	Sc I	50	20	U4
6243.36	Al II	-	100	V3	4607.331	Sr I	1000 R	50 R	U1	4019.137	Th	8	8	-
6231.76	Al II	-	30	-	4603.00	Li I	800	-	U4	4012.388	Ce I, II	60	20	-
6103.642	Li I	2000 R	300	U3	4593.177	Cs I	1000 R	50	U4	4008.753	W I	45	45	U3
5930.648	La I	250	-	U2	4555.355	Cs I	2000 R	100	U3	4000.454	Dy	400	300	-
5895.923	Na I	5000 R	500 R	U2	4554.042	Ba II	1000 R	200	V1	3987.994	Yb	1000 R	500 R	-
5889.953	Na I	9000 R	1000 R	U1	4524.741	Sn	500 wh	50	-	3968.468	Ca II	500 R	500 R	V2
5875.618	He I	-	[1000]	U3	4518.57	Lu	300	40	-	3961.527	Al I	3000	2000	U1
5870.9158	Kr I	-	[3000]	U2	4511.323	In I	5000 R	4000 R	U1	3951.154	Nd	40	30	-
5852.488	Ne I	-	[2000]	-	4500.977	Xe I	-	[500]	U4	3949.106	La II	1000	800	V2
5777.665	Ba I	500 R	100 R	U2	4454.781	Ca I	200	-	U2	3944.032	Al I	2000	1000	U2
5688.224	Na I	300	-	-	4434.960	Ca I	150	-	U3	3933.666	Ca II	600 R	600 R	V1
5682.657	Na I	80	-	-	4434.321	Sm II	200	200	V2	3911.810	Sc I	150	30	U1
5679.56	N II	-	[500]	V2	4425.441	Ca I	100	-	U4	3907.476	Sc I	125	25	U2
5676.02	N II	-	[100]	V4	4424.342	Sm II	300	300	V1	3906.316	Er	25	12	-
5666.64	N II	-	[300]	V3	4420.468	Os I	400 R	100	-	3905.528	Si I	20	15 W	-
5608.8	Pb II	-	[40]	V2	4390.865	Sm II	150	150	-	3902.963	Mo I	1000 R	500 R	U3
5570.2895	Kr I	-	[2000]	U3	4398.974	V I	80 R	60 R	-	3891.785	Ba II	18	25	V4
5535.551	Ba I	1000 R	200 R	U1	4384.722	V I	125 R	125 R	-	3891.02	Ho	200	40	-
5519.115	Ba I	200 R	60 R	U3	4379.238	V I	200 R	200 R	U1	3888.646	He I	-	[1000]	U2
5465.487	Ag I	1000 R	500 R	U4	4358.35	Hg I	3000 w	500	-	3874.18	Tb	200	200	-
5464.61	I II	-	[900]	-	4305.447	Sr II	40	-	-	3864.110	Mo I	1000 R	500 R	U2
5460.740	Hg I	-	[2000]	-	4303.573	Nd	100	40	-	3848.75	Tb	100	200	-
5455.146	La I	200	1	U3	4302.108	W I	60	60	U1	3838.258	Mg I	300	200	U2
5424.616	Ba I	100 R	30 R	U4	4294.614	W I	50	50	U2	3832.306	Mg I	290	200	U3
5400.562	Ne I	-	[2000]	-	4289.721	Cr I	3000 R	800 r	U3	3829.350	Mg I	100 w	150	U4
5350.46	Tl I	5000 R	2000 R	U1	4274.803	Cr I	4000 R	800 r	U2	3814.42	Ra II	-	[2000]	V1
5291.0	bh CaF	2000	-	-	4267.27	C II	-	500	V2	3798.252	Mo I	1000 R	1000 R	U1
5218.202	Cu I	700	-	U3	4267.02	C II	-	350	V3	3788.697	Yt II	30	30	-
5209.067	Ag I	1500 R	1000 R	U3	4254.346	Cr I	5000 R	1000	U1	3775.72	Tl I	3000 R	1000 R	U2
5208.436	Cr I	500 R	100	U4	4241.669	U	40	50	-	3774.332	Yt II	12	100	-
5206.039	Cr I	500 R	200	U5	4226.728	Ca I	500 R	50 W	U1	3768.405	Gd	20	20	-
5204.518	Cr I	400 R	100	U6	4226.570	Ge I	200	50	-	3761.917	Tm	200	120	-
5183.618	Mg I	500 wh	300	-	4225.327	Pr	50	40	-	3761.333	Tm	250	150	-
5172.699	Mg I	200 wh	100 wh	-	4215.556	Rb I	1000 R	300	U4	3748.264	Fe I	500	200	U4
5167.343	Mg I	100 wh	50	-	4215.524	Sr II	300 r	400 W	V2	3748.17	Ho	60	40	-
5161.188	I II	-	[300]	-	4211.719	Dy	200	15	-	3745.903	Fe I	150	100	U5
5153.235	Cu I	600	-	U4	4205.046	Eu II	200 R	50	-	3745.564	Fe I	500	500	U3
5105.541	Cu I	500	-	U5	4201.851	Rb I	2000 R	500	U3	3737.133	Fe I	1000 r	600	U2
5007.213	Ti I	200	40	-	4189.518	Pr	100	50	-	3719.935	Fe I	1000 R	700	U1
4999.510	Ti I	200	80	-	4186.599	Ce II	80	25	-	3710.290	Yt II	80	150	V1
4991.066	Ti I	200	100	-	4179.422	Pr	200	40	-	3694.203	Yb	500 R	1000 R	-
4981.733	Ti I	300	125	U1	4177.321	Nd	15	25	-	3692.652	Er	20	12	-
4962.263	Sr I	40	-	U4	4172.056	Ga I	2000 R	1000 R	U1	3692.357	Rh I	500 hd	150 wd	-
4934.086	Ba II	400 h	400 h	V2	4167.966	Dy	50	12	-	3683.471	Pb I	300	50	U2
4889.17	Re I	2000 w	-	U2	4165.606	Ce II	40	6	U5	3672.579	U	8	15	-
4872.493	Sr I	25	-	U3	4137.095	Cb I	100	60	U5	3663.276	Hg I	500	400	U5
4861.327	H I	-	[500]	U3	4130.664	Ba I	50 r	60 Wh	V3	3657.987	Rh I	500 W	200 W	-
4832.075	Sr I	200	8	U2	4129.737	Eu II	150 R	50 R	-	3654.833	Hg I	-	[200]	U4
4825.91	Ra I	-	[800]	U1	4123.810	Cb I	200	125	U4	3653.496	Ti I	500	200	U2

* Compiled from a combination of empirical and theoretical data selected from the literature.

† For the neutral atom, the most sensitive line (rare ultimate) is indicated by U1, and other lines by U2, U3, etc., in order of decreasing sensitivity. For the singly ionized atom, the corresponding designations are V1, V2, etc. In cases where U1 is not given, the most sensitive lines lie outside the spectral range 10,000-2000 Å.

WAVELENGTH TABLES

Wave-length	Element	Arc	Intensities Spk., [Dis]	Sensitivity	Wave-length	Element	Arc	Intensities Spk., [Dis]	Sensitivity	Wave-length	Element	Arc	Intensities Spk., [Dis]	Sensitivity
3650.146	Hg I	200	500	U3	3267.502	Sb I	150	150 Wh	-	2837.602	C II	-	40	V5
3646.196	Gd	200 w	150	-	3262.328	Sn I	400 h	300 h	U3	2836.710	C II	-	200	V4
3642.785	Sc II	60	50	V3	3262.290	Os I	500 R	50	-	2835.633	Cr II	100	400 r	V1
3642.675	Ti I	300	125	-	3261.057	Cd I	300	300	-	2833.069	Pb I	500 R	80 R	-
3639.580	Pb I	300	50 h	-	3258.564	In I	500 R	300 R	U5	2830.295	Pt I	1000 R	600 r	-
3635.463	Ti I	200	100	-	3256.090	In I	1500 R	600 R	U3	2820.224	Hf II	40	100	-
3634.695	Pd	2000 R	1000 R	U3	3247.540	Cu I	5000 R	2000 R	U1	2816.179	Al II	10	100	V2
3633.123	Yt II	50	100	-	3242.280	Yt II	60	100	-	2816.154	Mo II	200	300 h	V1
3630.740	Sc II	50	70	V2	3232.61	Li I	1000 R	500	U2	2809.625	Bi I	200 w	100	-
3613.836	Sc II	40	70	V1	3232.499	Sb I	150	250 wh	-	2802.695	Mg II	150	300	V2
3613.790	W II	10	30	-	3229.75	Ti I	2000	800	-	2802.19	Au	-	200	-
3610.510	Cd I	1000	500	-	3225.479	Cb II	150 w	800 wr	-	2795.53	Mg II	150	300	V1
3609.548	Pd I	1000 R	700 R	-	3220.780	Ir I	100	30	U1	2780.521	Bi I	200 w	100	-
3601.193	Zr I	400	15	U1	3215.560	W I	10	9	-	2780.197	As I	75 R	75	U5
3601.040	Th	8	10	-	3194.977	Cb II	30	300	-	2773.357	Hf II	25	60	-
3600.734	Yt II	100	300	-	3185.396	V I	500 R	400 R	U2	2769.67	Te I	-	[30]	-
3596.179	Ru I	30	100	U3	3183.982	V I	500 R	400 R	-	2767.87	Ti I	400 R	300 R	-
3572.473	Zr II	60	80	V4	3183.406	V I	200 R	100 R	-	2748.58	Cd II	5	200	-
3561.74	Tb	200	200	-	3179.332	Ca II	100	400 w	V3	2712.410	Ru	80	300	-
3554.43	Lu	50	150	-	3175.019	Sn I	500 h	400 hr	-	2709.626	Ge I	30	20	-
3552.172	U	8	12	-	3163.402	Cb II	15	8	-	2692.065	Ru	8	200	-
3547.682	Zr I	200	12	U2	3158.869	Ca II	100	300 w	V4	2678.758	Ru	100	300	-
3538.75	Th	-	50	-	3134.718	Hf II	80	125	-	2675.95	Au I	250 R	100	U2
3529.813	Co I	1000 R	30	U3	3131.072	Be II	200	150	V2	2669.166	Al II	3	100	V1
3524.541	Ni I	1000 R	100 wh	-	3130.786	Cb II	100	100	-	2659.454	Pt I	2000 R	500 R	U2
3519.605	Zr I	100	10	U3	3130.416	Be II	200	200	V1	2658.722	Pd II	20	300	-
3519.24	Ti I	2000 R	1000 R	U3	3125.284	V II	80	200 R	-	2651.575	Ge I	30	20	-
3516.943	Pd I	1000 R	500 R	-	3118.383	V II	70	200 R	V4	2651.178	Ge I	40	20	-
3515.054	Ni I	1000 R	50 h	-	3110.706	V II	70	300 R	V3	2650.781	Be I	25	-	U5
3513.645	Ir I	100 h	100	U2	3102.299	V II	70	300 R	V2	2641.406	Hf II	40	125	-
3509.17	Tb	200	200	-	3094.183	Cb II	100	1000	V1	2631.553	Al II	-	40	-
3499.104	Er	18	15	-	3093.108	V II	100 R	400 R	V1	2614.178	Pb	200 r	80	-
3498.942	Ru I	500 R	200	U1	3092.713	Al I	1000	1000	U3	2605.688	Mn II	100 R	500 R	V3
3496.210	Zr II	100	100	V3	3082.155	Al I	800	800	U4	2598.062	Sb I	200	100	-
3492.956	Ni I	1000 R	100 h	U2	3072.877	Hf I	80	18	-	2593.729	Mn II	200 R	1000 R	V2
3474.887	Sr II	80	50	-	3071.591	Ba I	100 R	50 R	U5	2589.167	W II	15 d	25	-
3472.48	Lu	50	150	-	3072.716	Bi I	3000 hR	2000 wh	U1	2576.104	Mn II	300 R	2000 R	V1
3466.201	Cd I	1000	500	-	3064.712	Pt I	2000 R	300 R	U1	2573.09	Cd II	3	150	-
3465.800	Co I	2000 R	25	U2	3058.66	Os I	500 R	500	-	2557.958	Zn II	10	300	V3
3464.57	Sr II	200	200	-	3039.356	In I	1000 R	500 R	U4	2554.93	P I	60	[20]	-
3462.21	Tm	200	100	-	3039.064	Ge I	1000	1000	U2	2553.28	P I	80	[20]	U3
3460.47	Re I	1000 W	-	U1	3034.121	Sn I	200 wh	150 wh	-	2536.519	Hg I	2000 R	1000 R	U2
3453.505	Co I	3000 R	200	U1	3009.147	Sn I	300 h	200 h	-	2535.65	P I	100	[30]	U2
3451.41	B II	5	30	V2	2997.967	Pt I	1000 R	200 r	-	2534.01	P I	50	[20]	-
3438.230	Zr II	250	200	V2	2989.029	Bi I	250 wh	100 wh	-	2530.70	Te I	-	[30]	-
3437.015	Ir I	20	15	-	2976.586	Ru	60	200	-	2528.535	Sb I	300 R	200	-
3436.737	Ru I	300 R	150	U2	2965.546	Ru	60	200	-	2528.516	Si I	400	500	U2
3434.893	Rh	1000 R	200 r	U1	2945.668	Ru	60	300	-	2519.822	Co II	40	200	-
3421.24	Pd I	2000 R	1000 R	U2	2943.637	Ga I	10	20 r	U3	2516.881	Hf II	35	100	-
3414.765	Ni I	1000 R	50 wh	U1	2940.772	Hf I	60	12	-	2516.123	Si I	500	500	U3
3406.664	Ta	70 w	18 s	-	2938.298	Bi I	300 w	300 w	-	2513.028	Hf II	25	70	-
3405.120	Co I	2000 R	150	-	2936.77	Ho	1000 R	1000 R	-	2506.899	Si I	300	200	U4
3404.580	Pd I	2000 R	1000 R	U1	2929.794	Pt I	800 R	200 w	-	2505.739	Pd II	3	30	-
3403.653	Cd I	800	500 h	-	2924.792	Ir I	25 wh	15	-	2502.001	Zn II	20	400 w	V4
3397.07	Lu	50	20 r	-	2918.32	Ti I	400 R	200 R	-	2498.784	Pd II	4	150 h	-
3396.85	Rh I	1000 w	500	-	2916.481	Hf I	50	15	-	2497.733	B I	500	400	U1
3391.975	Zr II	300	400	V1	2911.39	Lu	100	300	-	2496.778	B I	300	300	U2
3383.761	Ti II	70	300 R	-	2909.116	Mo II	25	40 h	V5	2488.921	Pd II	10	30	-
3382.891	Ag I	1000 R	700 R	U2	2909.061	Os I	500 R	400	U1	2478.573	C I	400	[400]	U2
3380.711	Sr II	150	200	-	2904.408	Hf I	30	6	-	2456.53	As I	100 r	8	U4
3372.800	Ti II	80	400 R	V3	2898.71	As I	25 r	40	-	2437.791	Ag II	60	500 wh	V2
3361.213	Ti II	100	600 R	V2	2898.259	Hf I	50	12	-	2427.95	Au I	400 R	100	U1
3349.035	Ti II	125	800 R	V1	2897.975	Bi I	500 WR	500 WR	U2	2413.309	Fe II	60	100 h	V5
3345.020	Zn I	800	300	U2	2894.84	Lu	60	200	-	2410.517	Fe II	50	70 h	V4
3323.092	Rh I	1000	200	-	2890.994	Mo II	30	50 h	V4	2404.882	Fe II	50	100 wh	V3
3321.343	Be I	1000 r	30	U2	2881.578	Si I	500	400	U1	2397.091	W II	18	30	-
3321.086	Be I	100	-	U3	2877.915	Sb I	250 W	150	-	2395.625	Fe II	50	100 wh	V2
3321.013	Be I	50	-	U4	2874.244	Ga I	10	15 r	U4	2388.918	Co II	10	35	-
3318.840	Ta	125	35	-	2871.508	Mo II	100	100 h	V3	2385.76	Te I	600	[300]	U2
3311.162	Ta	300 w	70 w	U1	2863.327	Sn I	300 R	300 R	U2	2383.25	Te I	500	[300]	U3
3302.988	Na I	300 R	150 R	U4	2860.934	Cr II	60	100	V5	2382.039	Fe II	40 r	100 R	V1
3302.588	Zn I	800	300	U3	2860.452	As I	50 r	50	-	2378.622	Co II	25	50 w	-
3302.323	Na I	600 R	300 R	U3	2855.676	Cr II	60	200 Wh	V4	2370.77	As I	50	3	-
3290.59	Th	-	40 h	-	2854.581	Pd II	4	500 h	-	2369.67	As I	40 r	-	-
3289.37	Yb	500 R	1000 R	-	2852.129	Mg I	300 R	100 R	U1	2363.787	Co II	25	50	-
3282.333	Zn I	500 R	300	U4	2849.838	Cr II	80	150 r	V3	2349.84	As I	250 R	18	U3
3280.683	Ag I	2000 R	1000 R	U1	2849.725	Ir I	40 h	20 h	-	2348.610	Be I	2000 R	50	U1
3273.962	Cu I	3000 R	1500 R	U2	2848.232	Mo II	125	200 h	V2	2335.269	Ba II	60 R	100 R	-
3269.494	Ge I	300	300	U3	2843.252	Cr II	125	400 r	V2	2312.84	Cd II	1	200	-
3267.945	Os I	400 R	30	-	2839.989	Sn I	300 R	300 R	U1	2311.469	Sb I	150 R	50	-

† For the neutral atom, the most sensitive line (rare ultimate) is indicated by U1, and other lines by U2, U3, etc., in order of decreasing sensitivity. For the singly ionized atom, the corresponding designations are V1, V2, etc. In cases where U1 is not given, the most sensitive lines lie outside the spectral range 10,000-2000 Å.

SENSITIVE LINES OF THE ELEMENTS

Wave-length	Element	Intensities		Sensi-	Wave-length	Element	Intensities		Sensi-	Wave-length	Element	Intensities		Sensi-
		Arc	Spk., [Dis.]	tivity†			Arc	Spk., [Dis.]	tivity†			Arc	Spk., [Dis.]	tivity†
2307.857	Co II	25	50 w	-	2264.457	Ni II	150	400	V3	2138.56	Zn I	800 R	500	U1
2304.235	Ba II	60 R	80 R	-	2253.86	Ni II	100	300	V4	2135.976	Cu II	25	500 w	V1
2296.89	C III	-	200	-	2246.995	Cu II	30	500	V3	2068.38	Sb I	300 R	3	U1
2288.12	As I	250 R	5	U3	2246.412	Ag II	25	300 hs	V3	2062.788	Se I	-	[800]	U3
2288.018	Cd I	1500 R	300 R	U1	2203.505	Pb II	50 W	5000 R	V1	2062.38	I	-	[900]	-
2287.084	Ni II	100	500	V1	2192.260	Cu II	25	500 h	V2	2061.91	Zn II	100	100	V2
2286.156	Co II	40	300 l	V1	2175.890	Sb I	300	40	U2	2061.70	Bi I	300 R	100	-
2276.578	Bi I	100 R	40	-	2169.994	Pb I	1000 R	1000 R	-	2039.851	Se I	-	[1000]	U2
2270.213	Ni II	100	400	V2	2144.382	Cd II	50	200 R	V1	2025.51	Zn II	200	200	V1
2265.017	Cd II	25 d	300	V2	2142.75	Te I	60 R	-	-					

† For the neutral atom, the most sensitive line (rare ultimate) is indicated by U1, and other lines by U2, U3, etc., in order of decreasing sensitivity. For the singly ionized atom, the corresponding designations are V1, V2, etc. In cases where U1 is not given, the most sensitive lines lie outside the spectral range 10,000-2000 Å.

TABLE V

KEY TO SYMBOLS FOR AUTHORS AND REFERENCES

Ab	Albertson, W. E.	Ct	Catalán, M. A.
Gd	Phys. Rev. 17 : 370 (1935)	Ag	An. Soc. Españ. Fís. Quím. 15 : 222; 483 (1917)
Ir	Unpublished material		Catalán and Sancho, P. M.
Os	Phys. Rev. 45 : 304 (1934)	Cr	An. Soc. Españ. Fís. Quím. 29 : 327 (1931)
Sm	Unpublished material	Cw	Crew, H., and McCauley, G. V.
Ad	Anderson, J. A.	Ca	Astrophys. Journ. 39 : 29 (1914)
Ca	Astrophys. Journ. 59 : 76 (1924)	Cx	Carroll, J. A.
An	Angerer, E. von	In, Tl	Royal Soc. London. Phil. Trans. A225 : 357 (1926)
Cl	Zeits. f. wiss. Phot. 22 : 200 (1923)	Cz	Curtis, C. W.
Li	Zeits. f. Physik 18 : 113 (1923)	Mn	Phys. Rev. 53 : 478 (1938)
Ar	Arnolds, R.	Da	Datta, S.
Sn	Zeits. f. wiss. Phot. 13 : 313 (1914)	K, Na	Royal Soc. London. Proc. A99 : 69 (1921)
Az	Aretz, M.		Datta and Bose, P. C.
Cu	Zeits. f. wiss. Phot. 9 : 256 (1911)	Li	Zeits. f. Physik 97 : 321 (1935)
Bb	Babcock, H. D.	Db	Deb, S. C.
Fe	Astrophys. Journ. 66 : 256 (1927)	I	Royal Soc. London. Proc. A139 : 380 (1933)
Bh	Behner, K.	Di	Dingle, H.
Ti	Zeits. f. wiss. Phot. 23 : 325 (1925)	F	Royal Soc. London. Proc. A128 : 603 (1930)
Bk	Belke, M.	Fe	Royal Astron. Soc. London. Monthly Notices 94 : 287 (1934)
W	Zeits. f. wiss. Phot. 17 : 132 (1917)	Hg	Royal Soc. London. Proc. A100 : 167 (1921)
Bl	Bloch, L. and E.	Dj	Déjardin, G.
Br	Annales de Physique 7 : 206 (1927)	Hg	Annales de Physique 10 : 424 (1927)
Cd, Zn	Annales de Physique 5 : 325 (1936)	Xe	Comptes Rendus 190 : 581 (1930)
Cl	Annales de Physique 8 : 403 (1927)	Dm	Dahmen, W.
I	Annales de Physique 11 : 141 (1929)	K	Zeits. f. Physik 35 : 528 (1925)
S	Annales de Physique 12 : 5 (1929)	Dn	Dhein, F.
Se, Te	Annales de Physique 13 : 233 (1930)	Co	Zeits. f. wiss. Phot. 19 : 289 (1920)
	Bloch and Déjardin, G.	Pd	Zeits. f. wiss. Phot. 11 : 317 (1912)
Ne	Journ. de Phys. et le Rad. 7 : 129; 203 (1926)	Do	Dobbie, J. K.
Bn	de Bruin, T. L.	Fe	Solar Phys. Obs., Cambridge, England. Annals 5 : 1 (1938)
A	K. Akad. van Wetens. Amsterdam. Proc. 40 : 342 (1938)	Dr	Dunoyer, M. L.
K	Zeits. f. Physik 38 : 96 (1926)	Cs, Rb	Journ. de Phys. et le Rad. 3 : 261 (1922)
Ne	Zeits. f. Physik 69 : 22 (1931)	Ds	(Piña) de Rubies, S.
Bs	Balasse, G.	Gd	Comptes Rendus 184 : 594 (1927)
Cs	Journ. de Phys. et le Rad. 8 : 318 (1927)	Nd	Comptes Rendus 197 : 33 (1933)
Bt	Bartelt, O.	Sc	An. Soc. Españ. Fís. Quím. 22 : 49 (1924)
Se	Zeits. f. Physik 91 : 444 (1934)	Du	Duffendack, O. S., and Wolfe, R. A.
S	Bartelt and Eckstein, L.	N	Phys. Rev. 34 : 409 (1929)
Bu	Burns, K.	Dv	Dhavale, D. G.
Ba	Comptes Rendus 156 : 1976 (1913)	Sb	Royal Soc. London. Proc. A131 : 109 (1931)
Cu	Phys. Rev. 48 : 656 (1935)	Ea	Earls, L. T., and Sawyer, R. A.
	Burns and Walters, F. M., Jr.	Pb	Phys. Rev. 47 : 115 (1935)
Cu	Allegheny Obs. (U. of Pittsburgh) Pub. 8 : 27 (1930); 37 (1931)	Ed	Eder, J. M.
Fe	Allegheny Obs. (U. of Pittsburgh) Pub. 8 : 39 (1931)	Au, Gd, Nd, Pr	
Bv	Bevan, P. V.		Akad. Wiss. Wien. Ber. 124 : 101 (1915)
Cs	Royal Soc. London. Proc. A83 : 421 (1910); A85 : 54 (1911); A86 : 320 (1912)	Dy	Akad. Wiss. Wien. Ber. 127 : 1099 (1918)
Rb	Royal Soc. London. Proc. A83 : 421 (1910)	Er, Yt	Akad. Wiss. Wien. Ber. 125 : 383 (1916)
Bx	Blair, H. A.	Eu	Akad. Wiss. Wien. Ber. 126 : 473 (1917)
Ag	Phys. Rev. 36 : 173; 1532 (1930)	Gd	Akad. Wiss. Wien. Ber. 125 : 1467 (1916)
Pd	Phys. Rev. 36 : 173 (1930)	Tb	Akad. Wiss. Wien. Ber. 131 : 199 (1922)
Bz	Bungartz, E.	Tl	Akad. Wiss. Wien. Ber. 122 : 607 (1913)
S	Annalen der Physik 76 : 709 (1925)		Eder and Valenta, E.
Cf	Crawford, M. F., and McLay, A. B.	Bi	Akad. Wiss. Wien. Ber. 119 : 519 (1910)
Bi	Royal Soc. London. Proc. A143 : 540 (1934)	Ho	Akad. Wiss. Wien. Ber. 119 : 9 (1910)
Cn	Cardaun, L.		
Hg	Zeits. f. wiss. Phot. 14 : 56, 89 (1914)		

KEY TO SYMBOLS

El	Ellis, J. W., and Sawyer, R. A.	Hi	Hall, J.
Tl	Phys. Rev. 49 : 147 (1936)	Cr	Kayser and Konen, Handbuch der Spectroscopie 7 (1). Hirzel, Leipzig (1923)
En	Edlén, B.	Hn	Hunter, A. A.
B	Zeits. f. Physik 73 : 477 (1932)	S	Royal Soc. London. Phil. Trans. A233 : 303 (1934)
C	Upsala Regia Soc. Scient. 9 : 77; 108 (1933)	Hp	Hampe, H.
F, K	Zeits. f. Physik 98 : 445 (1936)	Sr	Zeits. f. wiss. Phot. 13 : 348 (1914)
Es	Escalgon, F.	Hs	Hasbach, K.
Cd	Journ. de Phys. et le Rad 7 : 52 (1926)	Cu	Zeits. f. wiss. Phot. 13 : 399 (1914)
Ev	Evans, S. F.	Ht	Holtz, O.
I	Royal Soc. London. Proc. A133 : 417 (1931)	Ca	Zeits. f. wiss. Phot. 12 : 112 (1913)
Ex	Exner, F., and Haschek, E.	Hu	Humphreys, C. J.
Ag, Au, Ba, Cr, Co, Cu, Er, Eu, Gd, Ho, Mg, Mo, Nd, Pd, Pt, Rh, Ru, Sc, Sr, Ta, Tb, Th, Ti, W	Spektren der Elemente 2, 3 . Deuticke, Leipzig (1911)	A, Kr, Ne	Bur. of Stand. Journ. of Res. 20 : 17 (1938)
Fa	Fabry, C.	Kr	Phys. Rev. 47 : 714 (1935)
Rb	Comptes Rendus 195 : 1012 (1932)	Kr, Xe	Bur. of Stand. Journ. of Res. 5 : 1041 (1930)
Fd	Fred, M.	Xe	Bur. of Stand. Journ. of Res. 22 : 19 (1939)
Th	Astrophys. Journ. 87 : 179 (1938)	Hx	Hausmann, A. C.
Fh	Frerichs, R.	Pt	Astrophys. Journ. 66 : 333 (1927)
O	Phys. Rev. 34 : 1239 (1929)	Hz	Hetzler, C. W., Boreman, R. W., and Burns, K.
S	Zeits. f. Physik 80 : 152 (1933)	Ag, Be, Cd, Cu, K, Li, Na, Pb, Rb, Sn, Sr, Zn	Phys. Rev. 48 : 656 (1935)
Fi	Findley, J. H.	Ig	Ingram, S. B.
Co	Phys. Rev. 36 : 9 (1930)	C, N	Phys. Rev. 34 : 421 (1929)
Fl	Fowler, A.	S	Phys. Rev. 33 : 907 (1929)
Ba, Ca, Cd, Cs, In, K, Li, Mg, Na, O, Rb, Sr, Ti, Zn	Report on Series in Line Spectra Fleetway Press, London, 1922.	It	Iretton, H. J. C., and Keast, A. M.
N	Royal Soc. London. Proc. A107 : 31 (1925)	Ir, Pd, Pr, Pt, Yb	Royal Soc. Canada. Trans. 23 : 13 (1929)
O	Royal Soc. London. Proc. A110 : 480 (1926)	Ja	Jackson, C. V.
Si	Royal Soc. London. Proc. A123 : 425 (1929)	Kr	Royal Soc. London. Phil. Trans. A236 : 1 (1936)
C	Fowler and Selwyn, E. W. H. Royal Soc. London. Proc. A118 : 31 (1928)	Jn	Johnson, R. C.
Fm	Freeman, L. J.	C	Royal Soc. London. Proc. A108 : 343 (1923)
N	Royal Soc. London. Proc. A114 : 662 (1927); A124 : 654 (1929)	Jv	Jevons, W.
Fn	Frings, J.	Cl	Royal Soc. London. Proc. A103 : 198 (1923)
Ag	Zeits. f. wiss. Phot. 15 : 165 (1915)	Ka	Karlik, B., and Pettersson, H.
Fo	Foote, P. D.	Po	Akad. Wiss. Wien. Ber. 143 : 379 (1934)
Na	Astrophys. Journ. 55 : 145 (1922)	Kb	Krebs, A.
Fr	Frisch, S.	Co	Zeits. f. wiss. Phot. 19 : 307 (1919)
Na	Zeits. f. Physik 70 : 498 (1931)	Ke	Kerrie, W.
Fu	Fuchs, H.	I	Zeits. f. Physik 60 : 20 (1930)
Mn	Zeits. f. wiss. Phot. 14 : 239 (1914)	Kh	Krishnamurty, S. G., and Rao, K. R.
Gn	Grünter, R.	So	Royal Soc. London. Proc. A149 : 56 (1935)
Al	Zeits. f. wiss. Phot. 13 : 1 (1913)	Kl	Klein, E.
Gr	Gremmer, W.	Ga	Astrophys. Journ. 56 : 373 (1922)
Kr	Zeits. f. Physik 73 : 620 (1932)	Pb	Klein, F.
Ne	Zeits. f. Physik 50 : 705 (1928)	Kn	Zeits. f. wiss. Phot. 12 : 16 (1913)
Gs	Gieseler, H.	Ba	King, A. S.
Pb	Zeits. f. Physik 42 : 265 (1927)	Ce, Pr	Astrophys. Journ. 48 : 13 (1918)
Gt	Gartlein, C. W.	Dy, Gd, Ho, Tb	Astrophys. Journ. 68 : 191 (1928)
Ge	Phys. Rev. 31 : 782 (1928)	Eu	Astrophys. Journ. 72 : 221 (1930)
Gu	Geuter, P.	Fo	Astrophys. Journ. 89 : 377 (1939)
P	Zeits. f. wiss. Phot. 5 : 14 (1907)	Nd	Astrophys. Journ. 87 : 109 (1938)
Ha	Hamm, S.	Sr	Astrophys. Journ. 78 : 9 (1933)
Ni	Zeits. f. wiss. Phot. 13 : 105 (1913)	V	Astrophys. Journ. 82 : 140 (1935)
Hb	Hasselberg, B.	Yb	Astrophys. Journ. 60 : 281 (1924)
U	Klg. Sv. Vet. Akad. Handl. 45 : 5 (1910)	La	Astrophys. Journ. 73 : 328 (1931)
		Kp	King and Carter, E.
		Ag	Astrophys. Journ. 65 : 86 (1927)
			Kasper, F. J.
			Zeits. f. wiss. Phot. 10 : 1 (1911)

WAVELENGTH TABLES

Ks	Kiess, C. C.	Mc	McCormick, W. W., and Sawyer, R. A.
	Al, Ba, Ca, Cr, Cu, Fe, Mn, Na, Ni, V	Sn	Phys. Rev. 54: 71 (1938)
	Bur. of Stand. Journ. of Res. 1: 75 (1928)	Md	McDonald, M. C.
	C, Ti Bur. of Stand. Journ. of Res. 20: 33 (1938)	Hf	Royal Soc. Canada. Trans. 21: 223 (1927)
	Co, La, Yt Bur. of Stand. Sci. Papers 17: 318 (1922)		McDonald, Sutton, E. E., and McLay, A. B.
	Cl Unpublished material	Be	Royal Soc. Canada Trans. 20: 313 (1926)
	Cl Bur. of Stand. Journ. of Res. 10: 827 (1933)	Me	Meggers, W. F.
	Cr Bur. of Stand. Journ. of Res. 15: 79 (1935)	Ba, Ca, Cs, K, Rb, Sr	Bur. of Stand. Journ. of Res. 10: 669 (1933)
	Cu Bur. of Stand. Journ. of Res. 14: 519 (1935)	bhLa	Bur. of Stand. Journ. of Res. 9: 268 (1932)
	Dy, Gd Bur. of Stand. Sci. Papers 18: 695 (1922)	Bi	Unpublished material
	N Amer. Astron. Soc. Pub. 4: 363 (1922)	Cd	Optical Soc. Amer. Journ. 6: 135 (1922)
	N Science 60: 249 (1924)	Cu	Phys. Rev. 28: 449 (1926)
	Nd, Sm Bur. of Stand. Sci. Papers 18: 201 (1922)	Ir, Os, Pd, Pt, Rh, Ru	Bur. of Stand. Sci. Papers 20: 19 (1924)
	P Bur. of Stand. Journ. of Res. 8: 393 (1932)	Li	Bur. of Stand. Bull. 14: 371 (1918)
	Si Bur. of Stand. Journ. of Res. 21: 195 (1938)	Mn, Re	Bur. of Stand. Journ. of Res. 10: 757 (1933)
	Br Kiess and de Bruin, T. L.	Pb	Unpublished material
	Bur. of Stand. Journ. of Res. 4: 667 (1930)	Re	Bur. of Stand. Journ. of Res. 6: 1027 (1931)
	Cl Bur. of Stand. Journ. of Res. 2: 1117 (1929)	Sb	Unpublished material
	Zr Kiess, C. C. and Kiess, H. K.	Sc	Bur. of Stand. Sci. Papers 22: 61 (1927)
	Bur. of Stand. Journ. of Res. 6: 621 (1931); 5: 1205 (1930)	Sn	Unpublished material
	Ta Kiess and Stowell, E. Z.	Tm	Unpublished material
	Bur. of Stand. Journ. of Res. 12: 459 (1934)	V	Unpublished material
Kz	Kretzer, A.	Yt	Bur. of Stand. Journ. of Res. 1: 325 (1928)
	Sb Zeits. f. wiss. Phot. 8: 45 (1910)		Meggers and de Bruin, T. L.
Lc	Lacroute, M. P.	As	Bur. of Stand. Journ. of Res. 3: 765 (1929)
	Br, I Annales de Physique 3: 5 (1935)	Kr	Meggers, de Bruin, and Humphreys, C. J.
	S, So, Te Journ. de Phys. et le Rad. 9: 180 (1928)		Bur. of Stand. Journ. of Res. 11: 422 (1933)
Lf	Laffay, J.	Xe	Bur. of Stand. Journ. of Res. 3: 731 (1929)
	Hg Comptes Rendus 180: 823 (1925)		Meggers and Dieke, G. H.
Lg	Lang, R. J.	Ho	Bur. of Stand. Journ. of Res. 9: 121 (1932)
	As, Pb, Sn Royal Soc. London. Phil. Trans A224: 371 (1924)		Meggers, Foote, P. D., and Mohler, F. L.
	Ge Nat. Acad. Sci. Proc. 14: 34 (1928)	Na	Astrophys. Journ. 55: 145 (1922)
	Go Phys. Rev. 34: 708 (1929)		Meggers and Humphreys, C. J.
	Sb, Sn Phys. Rev. 35: 445 (1930)	A, Kr, No	Bur. of Stand. Journ. of Res. 10: 427 (1933)
	Lang and Sawyer, R. A.	A, Kr, Xe	Bur. of Stand. Journ. of Res. 13: 293 (1934)
	In Zeits. f. Physik 71: 453 (1931)	Fe	Bur. of Stand. Journ. of Res. 18: 543 (1937)
	Lang and Vestine, E. H.		Meggers and Kiess, C. C.
	Sb Phys. Rev. 42: 233 (1932)	Co, Fe, Ni	Bur. of Stand. Bull. 14: 637 (1919)
Ln	Lann, D. D.	Cr, Mn, Mo, Ti, U, W	Bur. of Stand. Sci. Papers 16: 51 (1920)
	W Bur. of Stand. Journ. of Res. 21: 207 (1938)	Ni, Ti, Zr	Bur. of Stand. Journ. of Res. 9: 309 (1932)
Lp	Laporte, O., Miller, G. R., and Sawyer, R. A.		Meggers and King, A. S.
	Cs Phys. Rev. 39: 461 (1932)	Cb	Bur. of Stand. Journ. of Res. 16: 385 (1936)
	Rb Phys. Rev. 38: 843 (1931)		Meggers and Russell, H. N.
Lr	Lorenser, E.	La	Bur. of Stand. Journ. of Res. 9: 625 (1932)
	Ba Kayser and Konen, Handbuch der Spectroscopic, 7 (1). Hirzel, Leipzig (1923)	Sc	Bur. of Stand. Sci. Papers 22: 338 (1927)
	Mo Kayser and Konen, Handbuch der Spectroscopic, 7 (3). Hirzel, Leipzig (1934)	V	Bur. of Stand. Journ. of Res. 17: 125 (1936)
Lx	Lub, W. A.		
	Ac K. Akad. van Wetens. Amsterdam. Proc. 40: 584 (1937)		

KEY TO SYMBOLS

Yt	Bur. of Stand. Journ. of Res. 2 : 733 (1929)	Mz	Martin, D. C.
	Meggers and Scribner, B. F.	Se	Phys. Rev. 48 : 938 (1935)
Hf	Bur. of Stand. Journ. of Res. 13 : 625 (1934)	Nm	Newman, F. H.
Lu	Bur. of Stand. Journ. of Res. 19 : 31 (1937)	Na	Phil. Mag. 5 : 150 (1928)
Yb	Bur. of Stand. Journ. of Res. 19 : 651 (1937)	Nu	Naudé, S. M.
Mh	Mihul, C.	Hg	Annalen der Physik 3 : 1 (1929)
O	Annales de Physique 9 : 294 (1928)	Ny	Nyswander, R. E., Lind, S. C., and Moore, R. B.
Mj	Majumdar, K.	Rn	Astrophys. Journ. 54 : 285 (1921)
Cl	Royal Soc. London Proc. A125 : 66 (1929)	Of	Offerhaus, H. C.
MI	McLennan, J. C.	He	Physica 3 : 309 (1923)
K	Royal Soc. London. Proc. A100 : 182 (1921)	Ok	Otsuka, O.
Mg	Royal Soc. London. Proc. A98 : 95 (1920)	Rb	Zeits. f. Physik 36 : 789 (1926)
	McLennan, Ainslie, D. S., and Fuller, D. S.	Om	Offermann, J.
Sn	Royal Soc. London. Proc. A95 : 316 (1919)	Bi	Kayser and Konen, Handbuch der Spectroscopie 7 (I). Hirzel, Leipzig (1923)
Te	Royal Soc. Canada. Trans. 19 : 56 (1925)	Ot	Olthoff, J., and Sawyer, R. A.
	McLennan and Allin, E. J.	Cs	Phys. Rev. 42 : 766 (1932)
Tl	Royal Soc. London. Proc. A129 : 43 (1930)	Pe	Petterson, H.
Au	McLennan and McLay, A. B.	Rn	Akad. Wiss. Wien. Ber. 143 : 303 (1934)
Pt	Royal Soc. Canada. Trans. 20 : 201 (1926)	Pk	Poetker, A. H.
Bi	McLennan, McLay, and Crawford, M. F.	H	Nature 119 : 123 (1927)
Hg	Royal Soc. London. Proc. A134 : 41 (1931)	O	Phys. Rev. 30 : 812 (1927)
Tl	Royal Soc. London. Proc. A125 : 50; 570 (1929)	Ps	Paschen, F.
Pd	McLennan and Smith, H. G.	Cd	Annalen der Physik 30 : 746 (1909); 35: 860 (1911)
	Royal Soc. London. Proc. A112 : 123 (1926)	Hg	Preuss. Akad. Wiss. Ber. p. 538 (1928)
Bi	Crawford and McLay	In	Annalen der Physik 32 : 148 (1938)
	Royal Soc. London. Proc. A143 : 540 (1934)	Mg	Preuss. Akad. Wiss. Ber. p. 709 (1931)
Mr	Merrill, P. W.	Ne	Annalen der Physik 60 : 405 (1919)
He	Astrophys. Journ. 46 : 357 (1917)		Paschen and Campbell, J. S.
Ms	Meissner, K. W.	In	Annalen der Physik 31 : 29 (1938)
A	Zeits. f. Physik. 39 : 179 (1926); 40 : 844 (1927)	Bo	Paschen and Kruger, P. G.
Al	Annalen der Physik 50 : 713 (1916)	C	Annalen der Physik 8 : 1005 (1931)
Cs	Annalen der Physik 65 : 380 (1921)		Annalen der Physik 7 : 1 (1930)
H	Annalen der Physik 50 : 901 (1916)		Paschen and Messner, K.
S	Meissner, Bartelt, O., and Eckstein, L.	In	Annalen der Physik 43 : 1223 (1914)
Se	Zeits. f. Physik 86 : 56 (1933)		Paschen and Ritschl, R.
	Zeits. f. Physik 91 : 427 (1934)	Al, He, Zn	Annalen der Physik 18 : 867 (1933)
Mt	Merton, T. R., and Johnson, R. C.	Pu	Puhlmann, M.
C	Royal Soc. London. Proc. A103 : 383 (1923)	Mo	Zeits. f. wiss. Phot. 17 : 97 (1917)
	Merton and Pilley, J. G.	Py	Perey, M.
N	Royal Soc. London. Proc. A107 : 411 (1925)	Ba	Comptes Rendus 204 : 244 (1927)
Mu	Murakawa, K.	Q	Quinke, M.
Cl	Zeits. f. Physik 69 : 510 (1931); 96 : 117 (1935); 109 : 162 (1938)	Au	Bur. of Stand. Sci. Papers 17 : 167 (1922)
Hg	Inst. Phys. and Chem. Res. Tokyo Sci. Papers 34 : 32 (1937)	Rc	Royds, T.
I	Zeits. f. Physik 109 : 162 (1938)	Rn	Phil. Mag. 17 : 202 (1909)
Mx	Menzies, A. C.		Rutherford, E., and Royds
Cu	Royal Soc. London. Proc. A119 : 249 (1928)		Phil. Mag. 16 : 313 (1908)
		Rd	Ruedy, R.
		Te	Phys. Rev. 41 : 588 (1932)
			Ruedy and Gibbs, R. C.
		Se	Phys. Rev. 46 : 880 (1931)
		Rf	Ricard, R.
		Cs	Comptes Rendus 206 : 905 (1938)
			Ricard, Givord, M., and George, F.
		Cs	Comptes Rendus 205 : 1229 (1937)
		Ri	Robinson, H. A.
		P	Phys. Rev. 49 : 297 (1936)
		Rk	Ruark, A. E.
		H	Astrophys. Journ. 58 : 46 (1923)
			Ruark, Mohler, F. L., Foote, P. D., and Chenault, R. L.
		Br, Sb	Bur. of Stand. Sci. Papers 19 : 471 (1924)
		Rl	Russell, H. N.
		Fe	Astrophys. Journ. 64 : 198 (1926)
		Ti	Astrophys. Journ. 66 : 295 (1927)
			Russell and Lang, R. J.
		Ti	Astrophys. Journ. 66 : 13 (1927)

WAVELENGTH TABLES

Ra	Rao, A. S.	Sq	Schulemann, O.
As	Phys. Soc. London Proc. 44: 343 (1932)	In	Zeits. f. wiss. Phot. 10: 270 (1911)
Pb	Rao and Narayan, A. L.	Ss	Stütting, H.
	Zeits. f. Physik 59: 687 (1930)	Cr	Zeits. f. wiss. Phot. 7: 73 (1909)
As	Rao, K. R.	St	Stiles, H.
	Phys. Soc. London Proc. 43: 68 (1931)	Hg	Astrophys. Journ. 30: 48 (1909)
Se	Rao and Badami, J. S.	Su	Suga, T., Kamiyama, M., and Sugiura, T.
	Royal Soc. London. Proc. A140: 387 (1933)	Hg	Inst. of Phys. and Chem. Res. Tokyo, Sci. Papers 34: 32 (1937)
Sn	Rao and Narayan, A. L.	Sv	Sommer, L. A.
	Zeits. f. Physik 45: 350 (1927)	Cs	Annalen der Physik 75: 165 (1924)
Rr	Reinheimer, O.	Ru	Zeits. f. Physik 37: 1 (1926)
Rb	Annalen der Physik 71: 168 (1923)	Sx	Smith, H. G., and Westman, M. E.
Rs	Rasmussen, E.	Be	Royal Soc. Canada. Trans. 20: 323 (1926)
A	Zeits. f. Physik 75: 696 (1932)		Smith, S.
Ba	Zeits. f. Physik 83: 404 (1933)	Pb	Royal Soc. Canada. Trans. 22: 333 (1928)
Hg	Naturwiss. 17: 389 (1929)	Tl	Phys. Rev. 34: 393 (1929)
Kr	Aedle Luftart. Spektre. Copenhagen I: 31 (1932)	Sy	Sawyer, R. A.
Ra	Zeits. f. Physik 86: 26 (1933); 87: 609 (1934)	B	Naturwiss. 15: 765 (1927)
Rn	Zeits. f. Physik 80: 726 (1933)		Sawyer and Lang, R. J.
Rt	Rosenthal, A. H.	Ga, In	Phys. Rev. 34: 712 (1929)
A	Annalen der Physik 4: 49 (1930)		Sawyer and Paschen, F.
Rx	Randall, H. M., and Wright, N.	Al	Annalen der Physik 84: 9 (1927)
Sn	Phys. Rev. 38: 457 (1931)		Sawyer and Paton, R. F.
Ry	Ryde, J. W.	Si	Astrophys. Journ. 57: 279 (1923)
N	Royal Soc. London. Proc. A117: 164 (1927)		Sawyer and Smith, F. R.
Rz	Ramb, R.	B	Optical Soc. Amer. Journ. 14: 287 (1927)
Rb	Annalen der Physik 5: 311 (1931)	Sz	Schmitz, K.
Sa	Saltmarsh, M. O.	Ba	Zeits. f. wiss. Phot. 11: 209 (1912)
P	Royal Soc. London. Proc. A108: 332 (1925)	Tk	Takahashi, Y.
Sd	Saunders, F. A.	Cd	Annalen der Physik 3: 42 (1929)
Ca	Astrophys. Journ. 52: 265 (1920)	To	Toshnival, G. R.
Cd	Fowler. Line Spectra. Fleetway Press, London, 1922.	Bi	Phil. Mag. 4: 776 (1927)
In, Ti	Astrophys. Journ. 43: 231 (1916)	Uh	Uhler, H. S., and Tanch, J. W.
	Saunders, Schneider, E. G., and Buckingham, E.	Ga, In	Astrophys. Journ. 55: 291 (1922)
Ba, Sr	Nat. Acad. Sci. Proc. 20: 291 (1934)	Vs	von Salis, G.
Sf	Symons, E.	Cd, Zn	Annalen der Physik 76: 145 (1925)
Pt	Zeits. f. wiss. Phot. 12: 277 (1913)	Wa	Watson, H. E.
Sg	Schillinger, K.	Ne	Royal Soc. London. Proc. A81: 195 (1908)
K	Akad. Wiss. Wien. Ber. 118: 605 (1909)	Rn	Royal Soc. London. Proc. A83: 50 (1910)
Sh	Shenstone, A. G.	Wb	Weinberg, M.
Cu	Royal Soc. London. Phil. Trans. A235: 195 (1936)	Ga, In	Royal Soc. London. Proc. A107: 138 (1925)
Pd	Phys. Rev. 32: 30 (1928) 36: 669 (1930)	Wd	Wiedmann, G.
Pt	Royal Soc. London. Phil. Trans. A237: 453 (1938)	Cd	Kayser and Konen. Handbuch der Spectroscopie. 7 (1). Hirzel, Leipzig (1923)
Sj	Schober, H.	Hg	Annalen der Physik 38: 1041 (1912)
Re	Akad. Wiss. Wien. Ber. 140: 629 (1931); 141: 601 (1932)	Zn	Annalen der Physik 35: 860 (1911)
	Ritschl, R., and Schober		Wiedmann and Schmidt, W.
	Physikalische Zeits. 38: 6 (1937)	Hg	Zeits. f. Physik 106: 273 (1937)
Sl	Slevogt, H.	Wg	Wagman, N. E.
Co, Cr, Mn, Ni	Zeits. f. Physik 82: 92 (1933)	Ga	U. of Pittsburgh Bull. 34: 327 (1937)
Sn	Sullivan, F. J.	Wn	Weigand, C.
Sr	U. of Pittsburgh Bull. 35: 284 (1938)	Mo	Zeits. f. wiss. Phot. 11: 261 (1912)
So	Soderquist, J.	Wo	Wolf, S.
Na	Upsala Regia Soc. Scient. 9: 102 (1934)	Rn	Zeits. f. Physik 48: 790 (1928)
Sp	Schippers, H.	Wr	Werner, S.
Sb	Zeits. f. wiss. Phot. 11: 241 (1912)	Li	Nature 115: 191 (1925)
		Wt	Walters, F. M., Jr.
		Ag, Al, Au, Bi, Hg, Pb, Sb, Sn	Bur. of Stand. Sci. Papers 17: 161 (1922)
		Wx	Wagner, F. L.
		Ag	Zeits. f. wiss. Phot. 10: 53 (1911)

**TABLES OF WAVELENGTHS
AND INTENSITIES OF THE
PRINCIPAL ATOMIC SPECTRUM LINES
IN THE RANGE 10,000—2000 Å.**

Wave-length	Element	Intensities			R	Wave-length	Element	Intensities			R	Wave-length	Element	Intensities			R
		Arc	Spk.,	[Dis.]				Arc	Spk.,	[Dis.]				Arc	Spk.,	[Dis.]	
9999.7	Co I	2 h	-	-	Me	9906.12	A II	-	-	[100 h]	Bn	9823.52	Co I	4 h	-	-	Me
9999.00	Hg I	-	[9]	-	Su	9905.44	Cu II	-	2	-	Sh	9823.42	Ne I	-	-	[5]	Me
9997.94	Ti I	15	-	-	Me	9904.47	Cr I	2	-	-	Ks	9823.39	Kr	-	-	[25 W]	Me
9988.65	Eu	15	-	-	Kn	9903.74	P I	18	-	-	Ks	9822.30	Zr I	15	-	-	Me
9988.47	La	10	-	-	Me	9903.30	Re	6	-	-	Me	9821.8	N I	-	-	[3]	Ig
9981.24	La I	6	-	-	Me	9902.31	Ne I	-	-	[30]	Me	9821.75	Hg I	-	-	[3]	Su
9981.16	Ti	5	-	-	Me	9900.9	Te I	-	-	[7]	Rd	9821.60	Ba I	2 h	-	-	Me
9980.90	Hg I	-	[10]	-	Su	9900.87	Cr I	5	-	-	-	9820.42	Zr I	2	-	-	Me
9980.55	Fe I	2 h	-	-	Me	9900.58	Ne I	-	-	[40]	Me	9818.67	Ta	2	-	-	Ks
9980.38	La	10	-	-	Me	9899.06	Ne I	-	-	[2]	Me	9818.39	Co	2	-	-	Me
9977.6	Te I	-	[15]	-	Rd	9898.90	Ni I	20	-	-	-	9816.63	Se II	-	-	[2]	Mz
9976.65	P I	10	-	-	Ks	9898.30	Eu	40	-	-	Kn	9813.75	Re	2	-	-	Me
9976.45	Re	4	-	-	Me	9897.30	Ne I	-	-	[3]	Me	9813.45	Ti I	5	-	-	Me
9976.40	Yb	4	-	-	Me	9897.08	Kr I	-	-	[2]	Me	9813.35	Cu II	-	-	20	Sh
9974.2	Ne I	-	[2]	-	Me	9896.6	Cb	5	-	-	Me	9812.85	Zr I	8	-	-	Me
9969.73	Se I	-	[4]	-	Rd	9894.44	Cu II	-	-	5	Sh	9811.36	Fe	2	-	-	Me
9969.34	Hg I	-	[10]	-	Su	9893.82	La II	4	-	-	Me	9810.27	Kr I	-	-	[2 h]	Me
9966.58	Xe I	-	[10]	-	Me	9893.04	Cu II	-	-	5 h	Sh	9809.67	Rn I	-	-	[3]	Rs
9966.19	Ni	3	-	-	Me	9892.97	Kr II	-	-	[2 h]	Me	9808.46	Cl I	-	-	[5]	Ks
9965.70	La	3	-	-	Me	9892.00	Lu	5	-	-	Me	9807.3	Pb	5 Wh	-	-	Me
9965.44	Cb	4	-	-	Me	9891.90	Si I	5 w	-	-	Ks	9807.3	hh Ca	20	-	-	L
9964.90	Re	2	-	-	Me	9890.92	Co I	30	-	-	Me	9805.38	Sn	300 Wl	-	-	Me
9963.55	Ne I	-	[6]	-	Me	9890.09	Cb	4	-	-	Me	9804.20	La	2	-	-	Me
9963.02	S	-	[20]	-	Fh	9889.082	Fe I	40	-	-	Me	9803.14	Kr	-	-	[125]	Me
9962.15	Hg	-	[2]	-	Su	9886.92	Si I	2 w	-	-	Ks	9800.92	A I	-	-	[4]	Me
9960.46	Cu II	-	15	-	Sh	9884.10	Re	2 w	-	-	Me	9800.335	Fe I	20	-	-	Me
9960.07	Cu II	-	10	-	Sh	9884.09	Cu II	-	-	10 h	Sh	9799.88	Yb	10	-	-	Me
9958.90	S	-	[150]	-	Fh	9883.16	Eu	10	-	-	Kn	9799.697	Xe I	-	-	[2000]	IMe
9957.29	Cb	15	-	-	Me	9882.18	A I	-	-	[6]	Me	9798.37	Co I	2 h	-	-	Me
9955.5	Te I	-	[14]	-	Rd	9881.57	Cu II	-	-	15	Sh	9796.79	P I	100	-	-	Ks
9955.45	Re I	60 W	-	-	Me	9881.24	La I	100	-	-	Me	9794.89	Kr I	-	-	[3]	Me
9955.2	K I	10 h	-	-	Me	9879.41	Ti I	3	-	-	Me	9792.91	Ba I	4 h	-	-	Me
9954.75	Kr II	-	[5 h]	-	Me	9878.08	Cl I	-	-	[2]	Ks	9792.90	Hg I	-	-	[2]	Su
9953.02	Re	3 w	-	-	Me	9875.95	Cl I	-	-	[50]	Ks	9792.74	Zr I	4	-	-	Me
9952.2	Co I	3 h	-	-	Me	9875.90	Ne I	-	-	[2]	Me	9790.08	P I	5	-	-	Ks
9951.88	A I	-	[20]	-	Me	9872.38	Re	15 sd	-	-	Me	9789.24	Si I	2 h	-	-	Ks
9950.64	Zn II	-	[2]	-	Ps	9870.07	Yb	6	-	-	Me	9788.1	Ne I	-	-	[2]	Me
9950.5	K I	20 h	-	-	Me	9869.23	Co	2	-	-	Me	9787.65	Ti I	50	-	-	-
9950.11	Zn II	-	[3]	-	Ps	9868.20	Cu II	-	-	15	Sh	9786.62	Fe I	2	-	-	Me
9949.90	Re I	200 W	-	-	Me	9868.09	Fo I	3	-	-	Me	9785.39	Co	40	-	-	Me
9949.84	S	-	[150]	-	Fh	9867.0	Te I	-	-	[10]	Rd	9784.501	A I	-	-	[1000]	IMe
9949.14	Sb	400 h	-	-	Me	9866.78	Sb	30	-	-	Me	9783.96	Fe I	3	-	-	Me
9949.06	Cr I	5	-	-	Ks	9865.56	Xe	-	-	[6 wh]	Hu	9783.6	Te I	-	-	[8]	Rd
9948.98	Ti I	8	-	-	Me	9865.44	V I	10	-	-	Me	9783.59	Ti I	20	-	-	Me
9948.57	Rn I	-	[6]	-	Rs	9864.26	Cu II	-	-	40	Sh	9783.38	Ti I	40	-	-	-
9947.94	Ne I	-	[15]	-	Me	9862.95	Kr I	-	-	[4]	Me	9780.93	Ta	2	-	-	Ks
9946.30	Cr I	2	-	-	Ks	9862.60	La I	3	-	-	Me	9780.40	Zr I	15	-	-	Me
9946.0	Hg II	-	[4]	-	Rs	9862.5	N I	-	-	[20]	Ig	9776.26	hh Sr	20 l	-	-	L
9945.01	Hg I	-	[2]	-	Su	9861.793	Fe I	30	-	-	Me	9775.30	Hg I	-	-	[3]	Su
9944.9	Ne I	-	[2]	-	Me	9861.41	Cu II	-	-	50	Sh	9775.13	Sb	20	-	-	Me
9944.13	Fe	3 h	-	-	Me	9858.87	Cu II	-	-	3 h	Sh	9775.09	La	8	-	-	Me
9944.1	Ne I	-	[7 h]	-	Me	9856.26	Sn	10	-	-	Me	9775.0	hh Ca	15	-	-	L
9943.70	Re	20	-	-	Me	9856.24	Kr I	-	-	[500]	Me	9773.27	Cr I	6	-	-	-
9941.50	Ta	5	-	-	Ks	9855.31	Rn I	-	-	[4]	Rs	9772.98	V	3	-	-	Me
9941.33	Ti I	8	-	-	Me	9852.58	La I	6	-	-	Me	9772.62	Ba I	4 h	-	-	Me
9940.69	Co I	2	-	-	Me	9840.58	Cu II	-	-	3	Sh	9772.24	La I	20	-	-	Me
9939.05	Cu II	-	20 d	-	Sh	9850.52	Sn	500 l	-	-	Me	9770.26	Ti I	40	-	-	-
9938.35	Ne I	-	[15]	-	Me	9848.70	La	4	-	-	Me	9770.10	Si I	4 w	-	-	Ks
9936.83	Ne I	-	[10]	-	Me	9847.7	Co I	2	-	-	Me	9768.82	La	3 h	-	-	Me
9932.72	La I	2	-	-	Me	9842.63	Re	20 W	-	-	Me	9768.69	Kr I	-	-	[2]	Me
9932.26	S	-	[150]	-	Fh	9842.04	Ni	2	-	-	Me	9768.27	Si I	5 w	-	-	Ks
9932.21	Ha I	-	[7]	-	Rs	9842.0	La	2	-	-	Me	9768.18	Ti I	5	-	-	-
9927.34	Ti I	20	-	-	Sh	9841.32	Lu	2	-	-	Me	9764.53	Co I	25	-	-	Me
9926.10	Cu II	-	10	-	Sh	9840.5	Te I	-	-	[7 wl]	Rd	9763.913	Fe I	15	-	-	Me
9925.67	Cu II	-	20	-	Sh	9839.58	Si I	2 w	-	-	Ks	9763.450	Fe I	15	-	-	Me
9923.25	Ti I	2	-	-	Me	9838.33	Kr I	-	-	[5]	Me	9762.65	Re I	20	-	-	Me
9923.198	Xe I	-	[2000]	-	IMe	9838.08	Hg I	-	-	[10]	Su	9760.57	Ne	-	-	[2]	Me
9923.03	As I	5	-	-	Me	9837.94	Cu II	-	-	25	Sh	9760.37	Yb	100	-	-	Me
9920.82	La I	150	-	-	Me	9837.47	Ne I	-	-	[20]	Me	9758.08	Si I	2 w	-	-	Ks
9918.52	Ne I	-	[4]	-	Me	9834.7	hh Ca	30	-	-	L	9756.72	Sb	25	-	-	Me
9918.05	Cu II	-	15	-	Sh	9834.61	P	2	-	-	Ks	9753.129	Fe I	10	-	-	Me
9917.60	Kr I	-	[3]	-	Me	9834.04	Fe I	3 h	-	-	Me	9752.84	Cr I	2	-	-	Ks
9916.52	Cu II	-	30	-	Sh	9833.76	As I	5	-	-	Me	9752.07	Re	4	-	-	Me
9916.37	Kr I	-	[4]	-	Me	9833.30	La	3 h	-	-	Me	9751.759	Kr I	-	-	[2000]	Me
9915.13	Ne I	-	[20]	-	Me	9832.15	Ti I	25	-	-	-	9750.73	P I	70	-	-	Ks
9914.92	Lu	100	-	-	Me	9831.35	Re	9	-	-	Me	9749.67	Re I	6	-	-	Me
9914.12	Co	3	-	-	Me	9830.90	Cu II	-	-	5	Sh	9748.60	Re	3	-	-	Me
9912.73	Co I	10	-	-	Me	9830.37	Ba I	300 hl	-	-	Me	9747.89	Rn I	-	-	[5]	Rs
9912.26	Cb	25	-	-	Me	9829.86	A II	-	-	[4]	Bn	9747.24	Fe	2	-	-	Me
9911.85	S	-	[5]	-	Fh	9829.06	Cu II	-	-	3	Sh	9746.86	Ti I	15	-	-	-
9911.08	La	3	-	-	Me	9828.06	Cu II	-	-	5	Sh	9746.05	Co I	50	-	-	-
9910.35	Cb	20	-	-	Me	9828.02	Bi	300	-	-	Me	9744.33	Cl I	-	-	[30]	Ks
9909.76	Zr	2	-	-	Me	9826.09	As I	8	-	-	Me	9743.55	Ti I	50	-	-	-
9908.97	Re	5	-	-	Me	9826.58	Kr	-	-	[25]	Me	9743.11	Kr I	-	-	[50]	Me
9908.80	S	-	[5]	-	Fh	9825.51	Se I	-	-	[6]	Rd	9742.28	Hf II	10	-	-	Me

9741.9—9510.7 Å.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
9741.93	S	- [70]	Fh	9672.04	La I	8	- Me	9592.19	Ne	- [5]	Me
9741.4	Sn	100 hd	- Me	9670.9	V I	3	- Me	9591.8	K I	50 WI	- Me
9741.0	bh Ca	5	- L	9670.49	Cr I	50	-	9591.35	Xe II	- [30 h]	Hu
9739.74	S	- [150]	Fh	9669.8	Cb	2	- Me	9591.32	Re	3 w	- Me
9739.6	Cu I	2 Wh	- Ks	9668.9	V I	2	- Me	9590.15	Ti I	3	- Me
9738.624	Fe I	200	- Me	9667.22	Cr I	25	-	9589.37	Ba I	50	-
9738.60	Si	6 w	- Ks	9666.86	A I	- [50]	Me	9588.77	Ti I	4	- Me
9738.50	V I	15	- Me	9666.59	Fe	2	- Me	9585.72	Si I	4	- Ks
9737.75	Ti I	5	-	9665.424	Ne I	- [1000]	IMe	9585.14	Xe I	- [20]	Me
9737.09	La I	100	- Me	9664.0	Ca I	5	- Me	9584.79	Ne	- [3]	Me
9736.95	S	- [20]	Fh	9663.34	Kr II	- [50]	Me	9584.0	Mn	10 h	- Me
9735.94	Cu II	15	- Sh	9663.13	Ti I	3	-	9582.28	V I	6	- Me
9734.74	P I	50	- Ks	9662.2	Sb	30 d	- Me	9581.12	Re I	8	- Me
9734.51	Cr I	50	-	9661.69	Lu	10	- Me	9578.68	Sb	400	- Me
9734.0	Xe	- [3 wh]	Hu	9661.36	Ti I	10	-	9577.52	Kr II	- [125]	Me
9733.72	Se II	- [3]	Bt	9658.94	Fe I	2	- Me	9574.26	Hg I	- [3]	Su
9732.28	Cu II	3	- Sh	9658.49	C I	250	- [15] Ks	9574.24	Cr I	50	-
9731.57	I	- [2]	Ev	9657.784	A I	- [1500]	IMe	9573.99	Ne I	- [2]	Me
9730.27	Cr I	25	-	9657.30	Fe I	3	- Me	9571.75	Re	6 w	- Me
9728.34	Ti I	60	-	9657.2	Bi	2000 d	- Me	9571.74	Cr I	25	-
9727.51	Kr I	- [2 Wh]	Me	9657.00	La II	20	- Me	9570.38	La I	5	- Me
9722.76	Re	4	- Me	9653.143	Fe I	20	- Me	9570.08	Ti I	4	- Me
9721.2	Fe I	- [50]	Rd	9650.97	Cb	12	- Me	9570.08	Si I	4	- Ks
9718.92	Ti I	20	-	9650.1	Bi	50 h	- Me	9569.960	Fe I	40 h	- Me
9718.16	Xe I	- [100]	Me	9649.94	S	- [250]	Fh	9569.57	Ta	2 h	- Ks
9717.16	Kr	- [2 Wh]	Me	9647.40	Ti I	80	- Me	9569.00	Co I	2 h	- Me
9717.00	Ti I	15	- Me	9646.47	La I	3	- Me	9568.58	Cr I	3	- Ks
9715.45	Ti I	3	-	9645.76	Ba I	25 h	-	9563.60	La II	4	- Me
9714.85	Kr I	- [15]	Me	9645.53	Ta	2 h	- Ks	9563.45	P I	25	- Ks
9713.77	Ba I	25 h	-	9644.2	Sr II	-	Sd	9561.60	A I	- [5]	Me
9713.52	La	3	- Me	9641.6	Xe	- [4 wh]	Hu	9560.72	La I	8	-
9711.60	Kr	- [50 Wh]	Me	9640.81	La	30	- Me	9555.2	A I	- [4]	Me
9710.52	Re	50	- Me	9639.06	P	2	- Ks	9554.1	Hg I	- [2]	Su
9710.03	Xe I	- [2]	Me	9639.0	Hg II	- [6]	Rs	9552.85	Kr	- [2 Wh]	Me
9709.45	La I	10	- Me	9638.24	Ti I	200	-	9550.90	Fe I	2	- Me
9708.36	V I	10	- Me	9637.55	Fe	2	- Me	9550.80	Mn I	20 h	- Me
9708.80	P I	2	- Ks	9635.30	Re	5	- Me	9550.11	Ti I	2	- Me
9706.48	La I	20	- Me	9634.22	Fe I	5	- Me	9549.40	Se I	- [7]	Rd
9705.59	Ti I	100	-	9633.78	S	- [70]	Fh	9549.13	Cb	8	- Me
9704.94	Re	3	- Me	9633.72	La I	40	- Me	9548.66	Co	2	- Me
9704.45	Ba I	10 h	-	9633.02	Mn I	4	- Me	9547.73	A I	- [2]	Me
9704.22	Kr I	- [50]	Me	9631.84	La	2	- Me	9547.40	Ne I	- [300]	Me
9702.86	Ti I	3	- Me	9631.11	Cb	50	- Me	9547.26	Zr I	15	- Me
9702.66	He I	- [10]	Me	9630.95	Xe	- [3 wh]	Hu	9546.2	Hu	- [5]	Pk
9702.40	Ne I	- [3]	Me	9626.88	Cb	100	- Me	9546.12	Sb	10 h	- Me
9702.30	Cl I	- [2]	Ks	9626.562	Fe I	30 h	- Me	9546.03	Ti I	50	-
9701.7	Ca I	20	- Me	9626.30	Cr I	4	- Ks	9545.27	P I	20	- Ks
9700.99	Xe I	- [20]	Me	9625.80	He I	- [3]	Me	9544.96	Se I	-	Rd
9700.0	bh Ca	10	- L	9620.96	Cb	10	- Me	9544.53	Co I	300	-
9699.70	Fe I	6 h	- Me	9620.86	C I	125	- [5] Ks	9543.64	Kr II	- [2 Wh]	Me
9699.64	La I	20	- Me	9619.61	Kr	- [100 Wh]	Me	9542.14	Mn	10 h	- Me
9698.68	Xe II	- [30 hl]	Hu	9616.40	Sn	150 h	- Me	9542.09	La I	40	-
9697.33	S	- [150]	Fh	9615.71	Xe	- [4 h]	Hu	9541.64	Se I	- [5]	Rd
9696.60	Co I	2	- Me	9615.63	Kr I	- [3]	Me	9541.23	La I	20	- Me
9696.03	Lu	30	- Me	9614.68	V I	50	- Me	9540.89	Kr I	- [30]	Me
9693.68	S	- [200]	Fh	9613.80	Kr II	- [25 Wh]	Me	9540.8	Rb I	5 WI	- Me
9692.6	La	2	- Me	9613.46	Co	3 h	- Me	9540.31	V I	5	- Me
9691.58	V I	40	- Me	9611.60	V I	90	- Me	9536.53	V I	2	- Me
9690.54	Ti I	2	-	9608.97	P I	5	- Ks	9535.72	Mn I	5 h	- Me
9689.41	Si I	8 w	- Ks	9608.90	Ba I	150	-	9534.167	Ne I	- [500]	IMe
9689.35	Ni I	3	- Me	9608.56	Mn I	100	- Me	9530.38	U	2 h	- Me
9688.81	Ti I	30	-	9606.77	Ti I	3	- Me	9530.30	Ba I	3 h	- Me
9688.71	Cu II	- 10	- Sh	9606.71	Mn I	5	- Me	9530.3	Cu I	3 Wh	- Ks
9688.6	Ca I	15	- Me	9606.52	Co I	2	- Me	9529.31	Fe I	4 h	- Me
9687.83	Kr I	- [10]	Me	9605.80	Kr	- [125 Wh]	Me	9529.27	He I	- [4]	Me
9686.3	Mn	15	- Me	9605.80	Xe I	- [3]	Me	9527.17	Co	3	-
9686.11	S	- [5]	Fh	9604.50	Xe II	- [7 h]	Hu	9526.21	Hg I	- [7]	Su
9685.32	Xe I	- [150]	Me	9604.06	Pb	50 WI	- Me	9526.17	He I	- [10]	Me
9684.9	Mn I	15	- Me	9603.50	He I	- [6]	Me	9525.78	P I	100	- Ks
9684.19	V	7	- Me	9602.94	Sb	20	- Me	9524.76	Ba I	40 h	-
9682.26	Kr I	- [2]	Me	9602.8	C I	60	-	9524.43	Yb	4	- Me
9680.80	S	- [200]	Fh	9602.07	Fe	2	- Me	9523.40	Re	6 w	- Me
9678.98	Ti I	3	- Me	9599.51	Ti I	50	-	9523.4	Rb I	10 WI	- Me
9678.21	Co I	3 h	- Me	9598.72	Cb	6	- Me	9520.13	Cr	2	- Ks
9677.80	A I	- [8]	Me	9598.7	Mn I	3	- Me	9520.06	Ni I	50	- Me
9677.5	Cb	4	- Me	9597.94	As I	10	-	9518.68	Sb	400	- Me
9676.75	Cb	50	- Me	9597.89	Co I	300	-	9516.70	He I	- [30]	Me
9676.50	Mn I	40	- Me	9597.76	K I	2	- En	9515.70	Hg	- [2]	Su
9676.27	P	3	- Ks	9595.60	K I	3	- En	9513.377	Xe I	- [200]	IMe
9676.0	Ca I	5	- Me	9595.09	A I	- [4]	Me	9513.24	Fe I	10 h	-
9675.55	Ti I	200	- Me	9595.06	Cb	60	- Me	9512.43	Cu II	- 2	Sh
9674.56	Pb	100 WI	- Me	9594.24	Kr II	- [25]	Me	9512.4	Ti I	30	- P
9673.39	A I	- [6]	Me	9593.54	P I	70	- Ks	9511.55	Ti I	10	- Me
9672.94	La II	3	- Me	9593.04	V I	2	- Me	9511.37	V	5 h	- Me
9672.34	S	- [200]	Fh	9592.25	Cl I	- [4]	Ks	9510.75	Ti I	15	-

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities					
		Arc	Spk.	[Dis]	R			Arc	Spk.	[Dis]	R			Arc	Spk.	[Dis]	R		
9509.11	V I	5 h	-	-	Me	9442.68	Xe I	-	-	[20]	-	Me	9383.82	Se I	-	-	[3]	-	Me
9508.45	Ti I	20	-	-	-	9442.34	Co I	2 h	-	-	-	Me	9383.74	Re	40	-	-	-	Me
9508.42	Hg	-	-	[2]	-	9441.76	P	5	-	-	-	Ks	9382.94	S	-	-	[20]	-	Fh
9508.4	Ne I	-	-	[5]	-	9441.46	Xe I	-	-	[20]	-	Me	9382.81	Fe	3 h	-	-	-	-
9506.59	Ne	-	-	[3]	-	9441.26	Zr	2	-	-	-	Me	9380.50	V	4	-	-	-	Me
9506.03	Ti I	30	-	-	-	9440.1	Pb II	-	-	[2]	-	Ea	9380.24	Re	10	-	-	-	Me
9505.78	Xe I	-	-	[10]	-	9440.02	Kr II	-	-	[20 Wh]	-	Me	9377.71	La I	3	-	-	-	Me
9505.28	Si	5	-	-	Ks	9439.80	V	8 h	-	-	-	Me	9377.63	A I	-	-	[5]	-	Me
9504.70	Kr II	-	-	[25]	-	9438.7	Cb	8 h	-	-	-	Me	9377.2	Ne I	-	-	[5]	-	Me
9504.50	Lu	2	-	-	Me	9438.55	Ta	2	-	-	-	Ks	9376.10	La	3	-	-	-	Me
9504.34	Re	3	-	-	-	9438.38	Pb	20 Wl	-	-	-	Me	9374.76	Xe I	-	-	[100]	-	Me
9502.12	MnI	8 h	-	-	Me	9438.29	La I	100	-	-	-	-	9374.15	A II	-	-	[10]	-	Bn
9500.60	Kr	-	-	[25 Wh]	-	9438.26	Hg I	-	-	[9]	-	Su	9374.02	Xe I	-	-	[10]	-	Me
9500.49	Re	8	-	-	Me	9437.91	Fe I	2	-	-	-	Me	9373.74	Se	-	-	[2]	-	Ms
9499.16	S	-	-	[5]	-	9437.60	S	-	-	[5]	-	Fh	9373.28	Ne I	-	-	[200]	-	Me
9497.9	Ne	-	-	[2]	-	9437.21	Kr II	-	-	[5 wh]	-	Me	9372.900	Fe I	6	-	-	-	Me
9497.07	Xe I	-	-	[40]	-	9437.11	S	-	-	[150]	-	Fh	9372.58	La I	20	-	-	-	-
9495.82	Hg I	-	-	[10]	-	9435.58	V I	80	-	-	-	-	9370.87	Re	2	-	-	-	Me
9494.81	Yt I	60	-	-	Me	9435.48	Cb	8	-	-	-	Me	9370.09	Ba I	300	-	-	-	-
9493.48	P I	7	-	-	Ks	9435.07	P I	3	-	-	-	Ks	9369.80	V	5	-	-	-	Me
9493.47	Zr I	2	-	-	Me	9433.63	F I	-	-	[3]	-	En	9367.49	Ba I	40 h	-	-	-	-
9487.76	Xe I	-	-	[4]	-	9432.94	Ne I	-	-	[40]	-	Rd	9366.92	V I	50	-	-	-	-
9486.680	Ne I	-	-	[500]	-	9432.43	Se I	-	-	[10]	-	Rd	9363.13	Re	20	-	-	-	Me
9486.02	A I	-	-	[3]	-	9432.06	Hg I	-	-	[9]	-	Su	9362.76	V I	2	-	-	-	Me
9485.14	La I	12	-	-	-	9431.77	Ti I	3	-	-	-	Me	9362.50	A I	-	-	[4]	-	Me
9483.35	Zr	3	-	-	Me	9430.08	Fe	4	-	-	-	Me	9362.370	Fe I	4	-	-	-	Me
9482.64	V	4	-	-	-	9429.58	Mn I	30 h	-	-	-	Me	9362.21	Sn	20 h	-	-	-	Me
9480.25	V I	5 h	-	-	Me	9427.53	Re	3	-	-	-	Me	9362.06	Cr I	12	-	-	-	Ks
9478.39	A I	-	-	[50]	-	9425.64	Hg I	-	-	[10]	-	Su	9362.03	Kr I	-	-	[100]	-	Me
9477.86	S	-	-	[20]	-	9425.38	Ne I	-	-	[500]	-	Me	9361.95	Kr II	-	-	[80]	-	Me
9476.98	La I	3	-	-	Me	9424.71	Mo	8	-	-	-	-	9361.58	V I	6	-	-	-	Me
9476.57	MnI	4 h	-	-	Me	9423.80	Ta	2	-	-	-	Ks	9359.420	Fe I	3	-	-	-	Me
9476.14	V I	10	-	-	Me	9423.44	Re	15	-	-	-	Me	9358.32	Zr I	3 h	-	-	-	Me
9475.23	Xe II	-	-	[3 h]	-	9421.93	S	-	-	[150]	-	Fh	9356.98	Co I	200	-	-	-	Me
9475.20	A II	-	-	[30]	-	9421.82	Si I	4	-	-	-	Ks	9354.218	A I	-	-	[200]	-	IME
9475.06	Kr II	-	-	[25 Wh]	-	9419.38	Hg I	-	-	[3]	-	Su	9353.3	Ne I	-	-	[3]	-	Me
9474.57	Cb	5	-	-	Me	9419.36	Zr I	2 h	-	-	-	Me	9353.17	Cb	10	-	-	-	Me
9474.45	La I	5	-	-	Me	9418.57	A II	-	-	[2]	-	Bn	9352.43	Zr	2	-	-	-	Me
9473.51	Ti I	2	-	-	Me	9417.0	Bi	100 h	-	-	-	Me	9352.23	Kr I	-	-	[100]	-	Me
9472.02	Cb	4	-	-	Me	9415.64	La	3	-	-	-	Me	9350.44	Fe I	10	-	-	-	-
9470.93	Kr II	-	-	[50 Wh]	-	9415.37	Sn I	80 hl	-	-	-	Me	9349.27	Yb	20	-	-	-	Me
9470.93	Cb	6	-	-	Me	9414.94	Kr II	-	-	[25]	-	Me	9349.08	Kr II	-	-	[30 Wh]	-	Me
9470.32	Pb	10 Wl	-	-	Me	9414.6	Ba I	4 h	-	-	-	Me	9347.96	Mo	20	-	-	-	Me
9470.14	Re I	30	-	-	Me	9414.14	Fe I	20 h	-	-	-	Me	9346.69	La II	15	-	-	-	Me
9467.92	V	3 h	-	-	Me	9413.59	Si I	100	-	-	-	Ks	9345.11	Kr II	-	-	[30 Wh]	-	Me
9467.8	Ne I	-	-	[2 h]	Me	9413.46	S	-	-	[150]	-	Fh	9344.92	Co I	30 h	-	-	-	-
9467.25	La	2	-	-	Me	9412.78	Mn	10 h	-	-	-	Me	9344.4	Cb	4	-	-	-	Me
9466.32	V I	8 h	-	-	Me	9412.64	La I	80	-	-	-	-	9343.44	Fe I	3	-	-	-	-
9464.3	Xe	-	-	[10 wh]	-	9412.39	Cb	4	-	-	-	Me	9342.55	Bi	500 h	-	-	-	Me
9463.71	Cu II	-	-	3	Sh	9412.32	Ne I	-	-	[4]	-	Me	9342.46	Hg I	-	-	[2]	-	Su
9463.66	Hg I	-	-	[60]	-	9412.01	Xe I	-	-	[60]	-	Me	9341.20	V I	100	-	-	-	-
9462.98	Fe I	2	-	-	Me	9411.32	V I	30	-	-	-	-	9340.8	Re	2 Wh	-	-	-	Me
9461.92	Se I	-	-	[2]	-	9410.86	Sn	50 Wl	-	-	-	Me	9340.59	A I	-	-	[3]	-	Me
9461.79	La I	50	-	-	-	9410.75	Ne I	-	-	[6]	-	Me	9340.5	Ne I	-	-	[2]	-	Me
9460.60	Mo	10	-	-	-	9409.69	Ti I	2	-	-	-	Me	9338.38	Hg I	-	-	[8]	-	Su
9460.0	N I	-	-	[8]	-	9408.66	A I	-	-	[3]	-	Me	9337.73	Re	2 W	-	-	-	Me
9459.21	Ne I	-	-	[300]	-	9408.60	Cb	20	-	-	-	Me	9336.47	Mn I	40 h	-	-	-	Me
9459.09	A I	-	-	[100]	-	9408.38	Mn	4 h	-	-	-	Me	9335.99	I I	-	-	[2]	-	Ev
9457.62	La	2	-	-	Me	9406.02	V I	4 h	-	-	-	Me	9334.91	V I	5 h	-	-	-	Me
9455.98	Ba I	100	-	-	-	9405.77	C I	300	-	[200]	-	Ks	9334.80	A I	-	-	[8]	-	Me
9455.43	S	-	-	[40]	-	9405.75	Ne I	-	-	[8]	-	Me	9334.08	Xe I	-	-	[3]	-	Me
9454.44	V I	10	-	-	Me	9403.58	Ba I	10	-	-	-	-	9333.94	Fe I	2	-	-	-	Me
9454.24	Fe I	4 h	-	-	Me	9402.82	Kr II	-	-	[50 Ws]	-	Me	9332.47	Re	2 w	-	-	-	Me
9453.55	Hf II	2	-	-	Me	9402.69	A I	-	-	[20]	-	Me	9332.04	Cu II	-	-	5	-	Sh
9453.20	Ti I	3	-	-	-	9401.14	Fe I	10 h	-	-	-	-	9331.979	Al II	-	-	[5]	-	Ps
9452.87	P	2	-	-	Ks	9400.59	Xe II	-	-	[15 h]	-	Hu	9331.90	Mn I	20h	-	-	-	Me
9452.45	Fe I	2	-	-	Me	9398.92	V I	10	-	-	-	Me	9331.67	Xe II	-	-	[4 h]	-	Hu
9452.08	Ne	-	-	[10]	-	9398.8	Ba I	5 h	-	-	-	Me	9331.546	Al II	-	-	[10]	-	Ps
9452.06	Cl I	-	-	[6]	-	9396.57	Ni I	2 h	-	-	-	Me	9330.66	Kr II	-	-	[2 h]	-	Me
9451.78	Sn	10 h	-	-	Me	9395.73	Se I	-	-	[2]	-	Ms	9328.87	La	2	-	-	-	Me
9451.59	Cu II	-	-	2	Sh	9394.71	Fe I	3 h	-	-	-	-	9328.19	V I	40	-	-	-	-
9450.88	Kr I	-	-	[20]	Me	9393.85	Cl I	-	-	[2]	-	Ks	9328.08	A I	-	-	[2]	-	Me
9450.08	Ba I	10 h	-	-	-	9393.8	Ne	-	-	[2]	-	Me	9327.24	Hg I	-	-	[2]	-	Su
9447.29	Ni I	5	-	-	Me	9393.56	Cb	4	-	-	-	Me	9327.02	Rn I	-	-	[50]	-	Re
9446.95	Cr I	75	-	-	-	9393.40	Si I	2 h	-	-	-	Ks	9326.52	Ne I	-	-	[600]	-	Me
9446.57	A I	-	-	[2]	Me	9392.8	Yb	5	-	-	-	Me	9326.03	Kr I	-	-	[10]	-	Me
9445.74	V I	10	-	-	Me	9392.5	N I	-	-	[120]	-	Ig	9325.90	Re	3	-	-	-	Me
9445.34	Xe I	-	-	[80]	-	9391.12	Re I	2	-	-	-	Me	9325.16	Mn I	5	-	-	-	Me
9445.26	Ne I	-	-	[3]	-	9390.50	La	4	-	-	-	-	9324.58	Ba I	50 h	-	-	-	-
9445.03	S	-	-	[5]	-	9388.28	Fe I	3 h	-	-	-	Me	9324.50	V I	6	-	-	-	-
9444.90	MnI	40	-	-	Me	9388.08	Kr	-	-	[12 Wl]	-	Me	9323.76	Mn	4 h	-	-	-	Me
9444.36	Cr I	4	-	-	Ks	9386.5	Ni I	-	-	[70]	-	Ig	9323.55	P I	3	-	-	-	Ks
9443.98	Fe I	10 h	-	-	Me	9385.62	N I	2 h	-	-	-	Me	9323.54	Cb	40	-	-	-	Me
9443.8	Ne I	-	-	[2]	-	9384.86	V I	30	-	-	-	-	9322.84	A	-	-	-	-	Me
9442.75	Hg I	-	-	[9]	-	9384.	bh C	-	-	-	-	L</							

9320.8—9143.2 Å.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities			R
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R	
9320.83	Br I	-	[4]	Ks	9255.89	V I	10	-	-	9206.66	Rn I	-	-	[2]	Rs
9318.24	Si I	4	-	Ks	9255.71	Re	2 w	-	Me	9206.3	Te I	-	-	[5 W]	Rd
9318.19	Zr	2 h	-	Me	9254.95	Ta	10	-	-	9206.19	Se I	-	-	[2]	Ms
9318.15	Fe I	3	-	-	9254.72	La I	8	-	Ks	-	9205.40	Cu II	-	20	Sh
9317.84	Kr II	-	[8 h]	Me	9254.59	Si I	4 h	-	-	9205.12	Re	2 w	-	-	Me
9316.53	V I	4	-	-	9254.	Ti II	-	[6]	El	9204.11	Co I	3	-	-	Me
9313.98	Ne I	-	[300]	Me	9253.90	Hg I	-	[8]	Su	9203.92	Lu	8	-	-	Me
9313.54	Cr I	8	-	-	9253.09	Ba I	25	-	-	9203.58	Se I	-	-	[3]	Rd
9313.54	V I	4	-	Me	9252.88	Mo	4	-	-	9203.20	Xe I	-	-	[30]	Me
9312.48	Ti I	4	-	Me	9252.40	Se I	-	[2]	Rd	9202.88	V I	4	-	-	Me
9311.59	Re	5	-	Me	9251.17	Zr I	6	-	Me	9202.140	In II	-	-	[6]	Ps
9310.58	Ne I	-	[150]	Me	9250.27	Hf	3	-	Me	9201.938	In II	-	-	[6]	Ps
9308.68	V I	20	-	-	9250.06	La	10	-	-	9201.76	Ne I	-	-	[600]	Me
9308.16	Ba I	50 h	-	-	9250.02	Re	10	-	Me	9200.72	Hg I	-	-	[3]	Su
9307.94	Fe I	2	-	Me	9249.41	Al II	-	[2]	Ps	9199.81	Se I	-	-	[2]	Ms
9306.64	Xe I	-	[40]	Me	9249.06	Se I	-	[2]	Ms	9199.52	Fe	2 h	-	-	Me
9306.50	Ba I	4 h	-	-	9246.54	Fe I	3	-	Me	9198.61	A	-	-	[50]	Me
9304.88	P I	5	-	Ks	9246.16	Ta	3	-	Ks	9198.016	In II	-	-	[3]	Ps
9304.44	Yb	15	-	Me	9246.05	Ti I	10	-	-	9197.707	In II	-	-	[4]	Ps
9303.15	Se I	-	[2]	Rd	9245.45	Kr	-	-	[5 W]	Me	9197.60	Cb	15	-	Me
9301.95	Xe I	-	[30]	Me	9245.380	In II	-	[2]	Ps	9197.47	Cl I	-	-	[2]	Ks
9300.85	Ne I	-	[600]	Me	9245.18	Xe I	-	[3]	Me	9197.40	Ta	5 Wh	-	-	Ks
9300.72	Rn I	-	[3]	Rs	9243.54	Kr	-	[30]	Me	9197.332	In II	-	-	[5]	Ps
9300.62	As I	50	-	Me	9243.29	Mn I	150	-	-	9197.18	Xe I	-	-	[2]	Me
9299.2	Cb	8	-	Me	9243.10	Hg I	-	[10]	Su	9196.18	Ni I	2	-	-	Me
9298.62	Hg I	-	[2]	Su	9242.91	V I	30	-	-	9196.1	bh Sr	10 l	-	-	L
9297.11	Se I	-	[5]	Ms	9242.65	Zr I	5	-	Me	9196.05	Ta	2 Wh	-	-	Ks
9296.1	Kr	-	[15 Wh]	Me	9242.30	Fe I	2	-	-	9194.68	A I	-	-	[150]	Me
9295.90	Rn I	-	[3]	Rs	9242.245	In II	-	[10]	Ps	9193.86	P I	2	-	-	Ks
9294.66	Fe I	2	-	Me	9241.985	In II	-	[6]	Ps	9193.4	bh Ca	2	-	-	L
9294.14	Cr I	20	-	-	9240.9	Cb	10	-	Me	9191.8	Ne	-	-	[3]	Me
9293.98	Pb	5 Wh	-	Me	9240.81	Mn	4	-	Me	9191.71	Cl I	-	-	[10]	Ks
9293.82	Kr II	-	[100 W]	Me	9238.60	Si I	2 w	-	Ks	9189.58	Ba I	70	-	-	-
9293.3	La	2 h	-	Me	9238.48	Kr II	-	[125]	Me	9188.69	Kr I	-	-	[2]	Me
9291.58	A I	-	[100]	Me	9237.49	S I	-	[200]	Fh	9186.96	Cb	20	-	-	Me
9290.747	Al II	-	[18]	Ps	9236.50	Re	4	-	Me	9185.09	Se I	-	-	[2]	Ms
9290.649	Al II	-	[20]	Ps	9234.40	Mn I	10	-	Me	9182.07	Hf	2	-	-	Me
9290.43	V I	10	-	-	9233.4	Ca	20	-	Me	9181.80	Se I	-	-	[6]	Rd
9290.38	Cr I	75	-	-	9233.18	Kr II	-	[12]	Me	9181.75	Co I	15	-	-	Me
9289.95	Kr	-	[5 W]	Me	9231.58	Yt I	80	-	Me	9181.23	Kr	-	-	[3 W]	Me
9288.84	Cl I	-	[8]	Ks	9231.15	Ta	2 h	-	-	9180.17	A I	-	-	[6]	Me
9288.550	Al II	-	[5]	-	9229.7	H	-	[4]	Pk	9178.68	F I	-	-	[3]	En
9288.4	Xe II	-	[5 wh]	Hu	9229.33	Zr	4	-	Me	9178.16	Br I	-	-	[1]	Ks
9288.145	Al II	-	[10]	Ps	9228.9	bh Ca	20	-	-	9177.94	Co I	10	-	-	-
9286.794	Al II	-	[5]	Ps	9228.11	S I	-	[200]	Fh	9175.42	Kr	-	-	[10 W]	Me
9286.578	Al II	-	[2]	Ps	9226.67	Ne I	-	[200]	Me	9173.59	Br I	-	-	[4]	Ks
9285.04	Ti I	5	-	Me	9226.60	La I	10 w	-	-	9173.46	Fe I	4 d	-	-	Me
9280.42	Co I	3	-	Me	9226.39	Xe II	-	[7 h]	Hu	9172.88	La	3	-	-	Me
9279.9	Kr I	-	[2]	Me	9226.09	V I	20	-	-	9172.39	La I	6	-	-	Me
9279.72	A II	-	[20]	Rn	9225.	Ti II	-	[8]	El	9172.24	Cs I	1000	-	-	Me
9279.12	Hg I	-	[2]	Su	9224.498	A I	-	[1000]	IMe	9172.09	Mn I	100	-	-	Me
9278.82	P	2	-	Ks	9222.39	Xe I	-	[5]	Me	9171.50	Zr I	4	-	-	Me
9276.89	Zr I	25	-	Me	9221.88	Ne I	-	[15]	Ms	9170.7	Ti I	20	-	-	Ps
9276.24	U	2	-	Me	9221.59	Ne I	-	[200]	Me	9170.38	Ti I	2	-	-	Me
9275.53	Ne I	-	[100]	Me	9221.08	A I	-	[5 h]	Me	9168.72	V I	20	-	-	-
9273.79	Lu	2	-	Me	9220.05	Ne I	-	[400]	Me	9167.53	Ti I	10	-	-	-
9273.40	V I	15	-	-	9219.72	Ba I	125	-	-	9167.52	Xe I	-	-	[100]	Me
9273.15	Hu	4	-	-	9219.63	La I	6	-	-	9166.44	Fe I	3 h	-	-	Me
9273.02	Kr I	-	[8]	Me	9218.30	Se I	-	[2]	Rd	9166.07	Br I	-	-	[7]	Ks
9272.63	Ta	3 h	-	Ks	9217.54	Fe I	5 h	-	Me	9165.80	V I	4	-	-	Me
9272.5	Sn	10 h	-	Me	9217.22	V I	4 h	-	Me	9165.52	Co I	5 h	-	-	Me
9271.99	Kr II	-	[10]	Me	9216.	Ti II	-	[4]	El	9165.38	Re	2	-	-	Me
9271.02	Se I	-	[6]	Rd	9215.36	Ba I	25 h	-	-	9164.81	V I	40	-	-	-
9270.96	Kr	-	[10]	Me	9215.1	bh Ca	5	-	L	9162.652	Xe I	-	-	[500]	IMe
9268.46	Re	15 w	-	Me	9214.41	Fe I	6	-	-	9159.66	Ba I	10 h	-	-	Me
9267.29	As I	25	-	Me	9214.30	Se I	-	[2]	Ms	9158.95	W	2	-	-	-
9265.88	Se I	-	[4]	Ms	9213.658	In II	-	[8]	Ps	9158.38	Xe	-	-	[2]	Me
9265.70	V I	20	-	-	9213.58	Re	2	-	Me	9157.85	Hg I	-	-	[2]	Su
9265.67	O I	-	[30]	Pk	9213.278	In II	-	[6]	Ps	9157.11	La	7	-	-	-
9265.67	Xe II	-	[10 h]	Hu	9212.950	In II	-	[4]	Ps	9156.55	V I	20	-	-	-
9265.39	Br I	-	[8]	Ks	9212.91	S I	-	[200]	Fh	9155.85	Mn I	5	-	-	Me
9263.96	Cr I	25	-	-	9212.9	Ne I	-	[2]	Me	9152.12	Xe I	-	-	[20]	Me
9263.69	Hg I	-	[2]	Su	9212.688	In II	-	[3]	Ps	9151.63	La I	4	-	-	-
9262.72	Se I	-	[2]	Ms	9212.468	In II	-	[2]	Ps	9150.77	A II	-	-	[2]	Bn
9262.61	O I	-	[15]	Pk	9211.38	Xe I	-	[25]	Me	9149.75	Bi	6 d	-	-	Me
9262.28	Re	4	-	Me	9211.03	Se I	-	[2h]	Ms	9148.68	Ne I	-	-	[600]	Me
9260.42	La II	3	-	Me	9210.37	A II	-	[2]	Bn	9148.45	Cr I	5	-	-	Ks
9260.31	O I	-	[10]	Pk	9210.28	He I	-	[6]	Me	9148.08	Fe I	3	-	-	Di
9259.06	Fe I	15	-	-	9210.10	Se I	-	[2 h]	Ms	9147.800	Fe I	5 h	-	-	Me
9258.49	Fe I	3	-	Me	9210.030	Fe I	6	-	Me	9146.75	La II	2	-	-	Me
9258.47	Ni I	5	-	Me	9209.66	Re	2 w	-	Me	9146.11	Fe I	3	-	-	-
9258.31	Fe I	20	-	-	9208.55	Si I	5 w	-	Ks	9145.1	Sn	20 Wh	-	-	Me
9258.18	Co I	2	-	Me	9208.46	Cs I	200	-	Me	9144.86	Re I	6 w	-	-	Me
9257.9	Mg I	2	-	Ps	9208.27	Cr I	25	-	-	9143.77	La I	5	-	-	-
9257.58	Ti I	8	-	-	9207.27	Kr	-	[2 Wh]	Me	9143.20	U	2	-	-	Me

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities						
		Arc	Spk.	[Dis.]	R			Arc	Spk.	[Dis.]	R			Arc	Spk.	[Dis.]	R	
9142.60	Cr I	8	-	-	Ks	9083.05	Se I	-	-	[8]	Rd	9023.1	Sn	20 Wh	-	-	-	
9142.18	La I	4 h	-	-	-	9083.03	Re	2	-	-	Me	9022.73	V I	29	-	-	-	
9141.8	Xe I	-	-	[2]	Me	9081.45	Re	4	-	-	Me	9022.43	I I	-	-	[4]	Ev	
9141.31	Cb	50	-	-	Me	9080.48	Fe I	3 h	-	-	Me	9022.40	Si	2 h	-	-	Ks	
9141.12	Cr I	2	-	-	Ks	9079.59	Fe I	8	-	-	Me	9021.80	Mn	4 h	-	-	Me	
9141.	bh C	-	-	-	L	9079.08	La I	50	-	-	-	9021.65	Cr I	100	-	-	-	
9140.97	U	2	-	-	Me	9078.67	Ni I	2	-	-	Me	9021.11	V I	20	-	-	-	
9140.79	Se I	-	-	[8]	Rd	9078.32	C I	150	-	-	[70]	Ks	9020.89	U	2 h	-	-	Me
9140.51	Cr I	2	-	-	Ks	9075.42	A I	-	-	-	[60]	Me	9019.84	Fe I	2	-	-	Me
9139.54	U	2	-	-	-	9074.6	He I	-	-	-	[2]	Me	9019.24	Sb	10	-	-	Me
9139.36	Zr I	8	-	-	Me	9073.34	V I	4	-	-	Me	9018.9	Sn I	30 Wh	-	-	Me	
9138.8	Eu I	2	-	-	Kn	9073.34	A I	-	-	-	[50]	Me	9018.63	Ba I	3 h	-	-	Me
9138.45	A II	-	-	[2]	Bn	9073.17	Cl I	-	-	-	[12]	Ks	9018.0	Eu	50	-	-	Kn
9136.65	Pb	8 Wh	-	-	Me	9073.04	Ne I	-	-	-	[8]	Me	9017.59	A II	-	-	[50]	Bn
9136.6	Xe	-	-	[5 wh]	Hu	9071.3	Te I	-	-	-	[6]	Rd	9017.03	Cr I	100	-	-	-
9136.1	Ti I	20	-	-	Ps	9070.74	Re	5	-	-	Me	9016.80	La II	2	-	-	Me	
9135.89	Ti I	2	-	-	-	9070.40	Fe I	2	-	-	-	9015.3	H	-	-	[3]	Pk	
9134.81	As I	15	-	-	Me	9069.7	Ne	-	-	-	[2]	Me	9015.13	Zr I	15	-	-	Ks
9134.23	Zr	2	-	-	Me	9069.68	Cl	-	-	-	[8]	Ks	9012.098	Fe I	30	-	-	Me
9133.4	Kr	-	-	[2 W]	Me	9069.40	Zr I	10	-	-	Ks	9011.74	Cb	7	-	-	Me	
9133.29	Ba I	15 h	-	-	Me	9067.46	Mo	2	-	-	Ks	9011.34	Zr I	4	-	-	Me	
9133.24	Co I	3 h	-	-	Me	9066.77	A I	-	-	-	[40]	Me	9010.55	Fe I	2	-	-	Me
9132.21	Sb	30	-	-	Me	9066.6	Re	2 W	-	-	Me	9009.91	Cr I	100	-	-	-	
9132.08	Re	2 w	-	-	Me	9066.54	Cb	4	-	-	Me	9009.15	Re	2 w	-	-	Ks	
9131.59	Xe I	-	-	[3]	Me	9066.50	Mn	2	-	-	Me	9009.04	Si I	5 hl	-	-	Me	
9130.71	Se	-	-	[2]	Bt	9063.7	Pb II	-	-	-	[100]	Ea	9008.37	Fe	2	-	-	Me
9130.	Ti II	-	-	[60]	El	9063.40	He I	-	-	-	[6]	Me	9008.26	La	6	-	-	-
9129.44	Cb	10	-	-	Me	9063.31	Re	2	-	-	Me	9006.15	Kr II	-	-	[3]	Me	
9125.25	Cb	10	-	-	Me	9062.53	C I	-	-	-	[150]	Ks	9005.99	Se I	-	-	[3]	Rd
9125.0	Mn	2	-	-	Me	9062.24	Fe I	2	-	-	Me	9005.58	Se I	-	-	[7]	Rd	
9123.60	Cb	2	-	-	Me	9061.48	C I	350	-	-	[200]	Ks	9005.14	Ni I	5	-	-	Me
9123.21	Ti I	5	-	-	-	9061.43	Cb	20	-	-	Me	9004.73	Hf	3	-	-	Me	
9123.17	Se	-	-	[2]	Ms	9060.6	N I	-	-	-	[125]	Ig	9003.7	To I	-	-	[30]	Rd
9122.966	A I	-	-	[500]	Ime	9059.85	Re	4	-	-	Me	9003.44	Se I	-	-	[8]	Rd	
9122.49	Kr I	-	-	[20]	Me	9059.74	Cr I	5	-	-	Ks	9003.08	V I	5	-	-	Me	
9121.14	Ne I	-	-	[20]	Me	9058.63	La I	2	-	-	Me	9001.93	Se I	-	-	[20]	Rd	
9121.12	Cl I	-	-	[15]	Ks	9058.6	Bi	50 W	-	-	Me	8999.561	Fe I	100	-	-	Me	
9119.17	La I	8 W	-	-	-	9058.55	Ni I	2	-	-	Me	8999.56	Rn I	-	-	[2]	Rs	
9118.888	Fe I	20	-	-	Me	9058.53	Re	3	-	-	Me	8999.19	Kr I	-	-	[30]	Me	
9117.68	Cb	7	-	-	Me	9058.38	I I	-	-	-	[7]	Ev	8999.11	Kr II	-	-	[2]	Me
9116.26	Lu	20	-	-	Me	9058.0	Eu	80	-	-	Kn	8999.10	V I	4	-	-	Me	
9116.14	Fe	2	-	-	Me	9057.51	A I	-	-	-	[2]	Me	8996.7	Ho I	-	-	[2]	Me
9115.00	Kr	-	-	[5 W]	Me	9057.23	A I	-	-	-	[4 h]	Me	8996.2	Cu I	3 h	-	-	Ks
9114.02	Mn I	40	-	-	Me	9056.48	La I	4	-	-	-	8994.09	A I	-	-	[10]	Me	
9113.88	I I	-	-	[6]	Ev	9052.54	Ne I	-	-	-	[6]	Me	8993.08	As I	20	-	-	Me
9113.78	V I	6	-	-	-	9050.7	Pb II	-	-	-	[100]	Ea	8991.36	Hg I	-	-	[7]	Su
9112.24	Xe I	-	-	[4]	Me	9049.06	Ne I	-	-	-	[3]	Me	8989.45	Ti I	12	-	-	-
9112.0	Eu	2	-	-	Kn	9046.97	La	2	-	-	Me	8988.86	Hg I	-	-	[8]	Su	
9111.85	C I	150	-	-	[100]	Ks	9046.71	V I	50	-	-	8988.58	Ne I	-	-	[200]	Me	
9111.69	Kr I	-	-	[20]	Me	9045.446	Xe I	-	-	-	[400]	Ime	8988.40	Re	2	-	-	Me
9106.40	Ni I	5 h	-	-	Me	9045.43	Cl I	-	-	-	[15]	Ks	8988.20	A I	-	-	[3]	Me
9105.87	V I	10	-	-	-	9045.1	C, N	150	-	-	-	Ig	8987.57	Xe I	-	-	[200]	Me
9105.70	Ta	3	-	-	Ks	9045.0	Eu	3	-	-	Kn	8985.82	Ti I	2	-	-	-	
9104.06	Yb	3	-	-	Me	9044.55	Kr II	-	-	-	[2 h]	Me	8984.87	Fe I	3	-	-	Me
9103.53	Ne I	-	-	[3]	Me	9044.47	Kr I	-	-	-	[3]	Me	8983.15	Cb	4	-	-	Me
9103.37	Si I	3 w	-	-	Ks	9044.38	Re	6	-	-	Me	8982.57	Eu	15	-	-	Kn	
9103.33	Cu II	-	-	10	Sh	9042.2	Te I	-	-	-	[8]	Rd	8982.35	Ni I	2	-	-	Me
9101.10	La II	2	-	-	Me	9042.11	F I	-	-	-	[10]	En	8982.1	Bi	15 hl	-	-	Me
9100.78	V I	8	-	-	Me	9039.95	Kr	-	-	-	[4 hl]	Me	8981.05	Xe I	-	-	[100]	Me
9100.47	Fe I	5 h	-	-	-	9039.27	S I	-	-	-	[20]	Fh	8978.70	Kr II	-	-	[4 hl]	Me
9099.90	Zr I	3	-	-	Me	9039.20	Hg I	-	-	-	[4]	Su	8977.99	Kr I	-	-	[50]	Me
9099.72	Kr	-	-	[4 h]	Me	9039.18	Cb	8	-	-	Me	8977.39	La I	2	-	-	Me	
9097.8	Ba	2 h	-	-	Me	9039.0	Nu I	-	-	-	[3]	Me	8976.83	Cr I	30	-	-	-
9096.71	La II	3	-	-	Me	9038.98	Cl I	-	-	-	[10]	Ks	8975.6	Ba	2 h	-	-	Me
9096.13	Xe I	-	-	[50]	Me	9038.72	S I	-	-	-	[20]	Fh	8975.408	Fe I	15	-	-	Me
9095.37	Co I	50	-	-	Me	9038.56	Se I	-	-	-	[20]	Rd	8973.65	Hg I	-	-	[8]	Su
9095.15	Se I	-	-	[2]	Ms	9037.91	Co I	60	-	-	-	8972.89	Co	2	-	-	Me	
9094.89	C I	500	-	-	[300]	Ks	9037.60	V I	30	-	-	8971.66	V I	40	-	-	-	
9094.8	Eu	3	-	-	Kn	9036.98	Ne I	-	-	-	[6]	Me	8971.14	Re I	2	-	-	Me
9094.44	Yb	3	-	-	Me	9036.73	S I	-	-	-	[5]	Fh	8970.98	A I	-	-	[2]	Me
9094.33	Kr I	-	-	[4 h]	Me	9036.32	S I	-	-	-	[40]	Fh	8970.07	La I	3	-	-	Me
9090.69	Ti I	25	-	-	-	9035.92	S I	-	-	-	[100]	Fh	8969.63	Se I	-	-	[10]	Rd
9089.413	Fe I	30	-	-	Me	9035.85	Cr I	50	-	-	-	8969.54	I II	-	-	[10]	Mu	
9088.70	Se I	-	-	[12]	Rd	9032.46	Re	3	-	-	Me	8969.23	Se I	-	-	[8]	Rd	
9088.57	C I	200	-	-	[100]	Ks	9032.18	Xe I	-	-	[50]	Me	8969.21	Re	4	-	-	Me
9088.326	Fe I	40	-	-	Me	9028.9	N I	-	-	-	[15]	Ig	8968.6	Ne I	-	-	[2]	Me
9088.14	Se I	-	-	[6]	Rd	9027.35	Ti I	20	-	-	-	8968.20	Ni I	8	-	-	Me	
9087.64	Ti I	2	-	-	-	9025.98	Xe I	-	-	-	[30]	Me	8967.76	Cb	20	-	-	Me
9086.94	Ti I	3	-	-	-	9025.67	Kr II	-	-	-	[3 hl]	Me	8967.53	Kr	-	-	[10]	Me
9085.3	Eu	50	-	-	Kn	9025.49	F I	-	-	-	[5]	En	8967.39	A I	-	-	[2]	Me
9085.25	Ni I	3	-	-	Me	9025.05	La I	2	-	-	Me	8966.63	Re I	7 w	-	-	Me	
9085.22	V I	40	-	-	-	9024.5	Eu	60	-	-	1	Kn	8965.99	Ni I	8	-	-	-
9084.91	Cb	7	-	-	Me	9024.47	Fe I	15	-	-	Me	8965.5	Eu	4	-	-	Kn	
9084.29	Mn I	30	-	-	Me	9023.65	Ti I	3	-	-	-	8965.41	La	2	-	-	Me	
9083.2	Eu	30	-	-	Kn	9023.53	U	2 h	-	-	-	8964.48	A I	-	-	[10]	Me	

Wave-length	Element	Intensity, Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity, Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity, Arc	Spk., [Dis.]	R
8963.99	Br I	-	[5]	Ks	8912.78	F I	-	[25]	En	8851.32	Re I	3 W	-	Me
8963.65	La I	6	-	-	8910.24	F I	-	[15]	En	8850.70	Co I	10 h	-	Me
8963.60	V I	5	-	-	8910.05	Zr I	3	-	Ks	8850.3	Te I	-	[15]	Rd
8962.34	Ne I	-	[3]	Me	8909.83	Ba I	3 h	-	Me	8849.97	A I	-	[150]	Me
8962.19	A I	-	[40]	Me	8908.73	Xe I	-	[200]	Me	8849.07	F I	-	[3]	En
8962.07	Re	2	-	Me	8907.9	Bi I	200 wh	-	Me	8847.28	S I	-	[15]	Fh
8961.9	Eu	2	-	Kn	8907.6	Sn	20 wh	-	Me	8846.82	Fe I	5	-	Me
8959.75	Cb	20	-	Me	8906.33	Zr I	3	-	Ks	8845.23	Re	3 W	-	Me
8958.37	Co I	4	-	Me	8905.78	Cb	30	-	Me	8844.57	Re	2 s	-	Me
8957.73	La I	25	-	-	8904.73	Co I	5 Wh	-	-	8844.50	F I	-	[5]	En
8955.77	Cr I	3	-	-	8904.53	A II	-	[2]	Bn	8844.50	Zr I	2	-	Ks
8954.65	Ni I	2	-	Me	8904.04	K I	3	-	En	8842.48	Mn I	3 h	-	Me
8952.78	Xe I	-	[50]	Me	8903.1	Sb	5 Wh	-	Wt	8842.46	Kr I	-	[3]	Me
8952.251	Xe I	-	[1000]	IMe	8902.66	Xe	-	[5 wh]	Hu	8842.1	Ne	-	[2]	Me
8951.87	U	2	-	-	8902.20	K I	5	-	En	8841.26	Al I	-	[10]	Ps
8950.18	Lu	10	-	Me	8901.36	Re	3 W	-	Me	8840.82	A I	-	[20]	Me
8949.63	Lu	15	-	Me	8900.92	F I	-	[30]	En	8840.39	A I	-	[3]	Me
8949.33	Si	15 w	-	Ks	8899.8	Eu	8	-	Kn	8839.9	Xe	-	[3 wh]	Hu
8949.31	Br I	-	[2]	Ks	8899.62	Zr I	15	-	-	8839.63	La I	10	-	Me
8949.17	V I	4	-	-	8899.50	Si	3 w	-	Ks	8838.96	Nd	5	-	Ks
8948.93	Lu	20	-	Me	8899.2	Re	2	-	Me	8838.433	Fe I	30	-	Me
8948.89	La	2	-	Me	8898.97	Si	3 w	-	Ks	8836.09	Zr I	15	-	Ks
8948.12	Ne I	-	[7]	Me	8898.44	I I	-	[5]	Ev	8835.85	Yt II	2	-	Me
8948.01	Cl I	-	[20]	Ks	8897.64	Br I	-	[15]	Ks	8835.65	Kr I	10	-	-
8947.15	Cr I	50	-	-	8897.5	Cb	6	-	Me	8835.21	Co I	10	-	Me
8945.204	Fe I	20	-	Me	8896.4	Cb	5	-	Me	8834.82	Ta	2	-	-
8944.56	Re	2	-	Me	8895.6	Ne I	-	[2]	Me	8832.565	In II	-	[4]	Ps
8943.50	Ca I	2000 R	-	Me	8895.36	Mn	4	-	Me	8832.376	In II	-	[3]	Ps
8943.00	Fe I	3	-	Me	8893.73	Hg I	-	[7]	Su	8831.22	F I	-	[10]	En
8941.74	Zr I	3	-	Ka	8892.97	Si	25 w	-	Ks	8830.92	Ne I	-	[50]	Me
8941.47	Ne I	-	[6]	Me	8892.22	Ne I	-	[10]	Me	8830.4	Te I	-	[15]	Rd
8939.20	Cr I	8	-	Ks	8888.83	Br I	-	[2]	Ks	8828.91	Al I	-	[2]	Ps
8938.13	Co	2	-	-	8888.70	Co I	3 h	-	Me	8827.83	Mn	3	-	Me
8938.14	Se I	-	[9]	Rd	8887.50	Hg I	-	[4]	Su	8825.82	La I	25 w	-	-
8937.93	Ba I	10 h	-	Me	8886.8	Eu	2	-	Kn	8825.26	Br I	-	[15]	Ks
8936.51	Ta	2 h	-	Ka	8886.61	Sn	5	-	Wa	8824.227	Fe I	200	-	Me
8935.7	Eu	4	-	Kn	8886.58	Re I	15	-	Me	8823.39	W	5	-	-
8935.68	As I	50	-	Me	8885.71	Xe I	-	[10]	Me	8821.76	As I	150	-	Me
8934.41	Eu	50	-	Kn	8884.24	La I	2	-	Me	8821.31	W	3	-	-
8933.43	Cb	6	-	Me	8884.23	S I	-	[150]	Fh	8821.18	Ti I	12	-	-
8932.96	Mn	2	-	Me	8884.2	Eu	2	-	Kn	8820.36	Ne	-	[6]	Me
8932.53	V I	50 w	-	-	8883.84	Si	4 w	-	Ks	8820.26	Mn I	4 h	-	Me
8932.64	Ta	6 h	-	-	8883.62	W	5	-	-	8819.95	Br I	-	[10]	Ks
8932.39	Br I	-	[3]	Ks	8882.95	Re	15 ws	-	Me	8819.60	O	-	[70]	Fh
8931.62	V I	7 h	-	Me	8882.47	S I	-	[70]	Fh	8819.411	Xe I	-	[5000]	IMe
8930.83	Xe I	-	[200]	Me	8880.70	S I	-	[20]	Fh	8819.38	Ti I	8	-	-
8930.70	Cb	2	-	Me	8879.56	La	3	-	Me	8819.15	Co I	20	-	-
8930.10	Zr I	2	-	Ks	8877.07	Ni I	2	-	Me	8818.93	La	10	-	-
8929.72	Mn I	50 h	-	Me	8876.13	Fe I	2	-	Me	8817.0	Eu	2	-	Kn
8929.24	Ne I	-	[10]	Me	8875.05	La	2	-	Me	8815.56	Cb	100	-	Me
8929.04	Fe I	5	-	Me	8874.84	A I	-	[4]	Me	8814.333	In II	-	[4]	Ps
8928.97	Mg I	2	-	Ps	8874.53	S I	-	[150]	Fh	8813.925	In II	-	[3]	Ps
8928.692	Kr I	-	[2000]	IMe	8872.26	Se I	-	[3]	Rd	8813.543	In II	-	[2]	Ps
8927.41	Ba I	7 hl	-	Me	8871.61	W	8	-	-	8812.6	Sn	10 Wh	-	Me
8927.4	Ne I	-	[2]	Me	8871.02	La	2 h	-	-	8810.57	La	3	-	Me
8927.28	Re	5	-	Me	8870.70	Co I	3	-	Me	8809.47	Ni I	8	-	Me
8926.28	Co I	20	-	-	8870.34	Eu	100	-	Kn	8809.1	Fe I	2	-	Me
8926.07	A II	-	[3]	Bn	8870.32	Kr	-	[4]	Me	8808.3	Fe I	4 h	-	Me
8926.06	Mn I	15 h	-	Me	8869.69	As I	100	-	Me	8807.75	Rn I	-	[10]	Rs
8925.78	Cr I	15	-	-	8868.846	Rb I	30	-	IRz	8807.59	F	-	[25]	En
8925.55	Si	8 w	-	Ks	8868.508	Rb I	70	-	IRz	8807.52	Br I	-	[2]	Ks
8925.3	Kr	-	[2]	Me	8868.40	Fe I	3	-	-	8806.79	Mg I	100	-	Qb
8925.04	Zr I	4	-	Ks	8867.35	La	2 h	-	Me	8805.78	Kr I	-	[20]	Me
8924.19	Se I	-	[3]	Rd	8866.961	Fe I	150	-	Me	8805.16	A	-	[3]	Me
8923.56	Al I	-	[5]	Ps	8865.759	Ne I	-	[500]	IMe	8804.98	Zr I	5	-	Ks
8922.61	Yb	20	-	Me	8865.50	W	15	-	-	8804.624	Fe I	10	-	Me
8919.95	Fe I	10	-	Me	8865.33	Ne I	-	[100]	Me	8804.61	Xe	-	[25]	Hu
8919.80	V I	100 w	-	-	8863.4	H	-	[2]	Pk	8803.988	In II	-	[2]	Ps
8919.50	Ne I	-	[300]	Me	8863.09	Ti I	3	-	Me	8803.764	In II	-	[3]	Ps
8918.80	Se I	-	[30]	Rd	8863.	Bi II	-	[60]	Cf	8800.62	Yt I	8	-	Me
8917.65	Eu	60	-	Kn	8862.58	Ni I	10	-	-	8799.79	Se I	-	[3]	Rd
8917.10	Cr I	10	-	-	8862.32	Xe I	-	[300]	Me	8799.76	Ba I	100 h	-	Me
8916.35	V I	2	-	Me	8861.5	Bi I	20 Wl	-	Me	8799.76	Cb	7	-	Me
8916.24	Cr I	12	-	-	8860.99	Ba I	80	-	-	8799.13	A I	-	[100]	Me
8915.88	Se I	-	[4]	Rd	8860.58	U	2	-	-	8798.66	Mn I	3 h	-	Me
8915.78	W	8	-	-	8860.3	Sb	5 Wh	-	Wt	8798.22	Cb	2	-	Me
8915.76	Cb	4	-	Me	8859.76	Sm	2	-	Ks	8797.70	Re	30 Wl	-	Me
8915.44	Ne I	-	[3]	Me	8859.08	Mn	2 h	-	Me	8797.6	La	2 h	-	Me
8914.96	Ba I	100	-	-	8858.62	I I	-	[4]	Db	8796.83	Mn I	6 h	-	Me
8914.7	He I	-	[2]	Me	8858.4	Pb	5 Wh	-	Me	8796.42	Fe I	2	-	Me
8914.58	Se I	-	[4]	Rd	8858.39	Al II	-	[2]	Ps	8795.6	Lu	2	-	Me
8913.66	Sm II	7	-	Ks	8857.46	I I	-	[4]	Ev	8794.40	Ti I	8	-	Me
8913.0	Ne	-	[3]	Me	8855.74	Xe	-	[5 wh]	Hu	8793.46	Br I	-	[6]	Ks
8912.90	Cl I	-	[15]	Ks	8853.866	Ne I	-	[700]	IMe	8793.376	Fe I	125	-	Me
8912.88	Al I	-	[2]	Ps	8853.39	I	-	[4]	Ev	8793.36	Ba I	2 h	-	Me

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
8792.51	Ne I	-	[30]	Me	8746.43	Kr I	-	[3]	Me	8702.49	Ni I	4	-	Me
8792.0	Re	2 h	-	Me	8746.09	Hg I	-	[3]	Su	8701.6	bh V	1	-	L
8792.	Yb	-	10	It	8746.08	Rn I	-	[3]	Rs	8701.05	Mn I	150 w	-	Me
8791.28	Si	5 w	-	Ks	8745.574	Co I	4 h	-	Me	8700.95	A I	-	[3]	Me
8790.89	Eu	40	-	Kn	8744.58	W	8	-	-	8700.80	I I	-	[2]	Ev
8790.88	Si	4 w	-	Ks	8744.37	Co I	30	-	Me	8700.6	Te I	-	[20]	Rd
8790.62	Fe I	10 h	-	Me	8744.03	Lu	3	-	Me	8700.1	Sb	50 Wh	-	Me
8789.2	Sb	5 Wh	-	Wt	8743.9	Eu	6	-	Kn	8700.05	bh Sr	10 l	-	L
8789.1	Te I	-	[6]	Rd	8742.60	Si I	100	-	Ks	8699.13	Mn I	100 w	-	Me
8788.83	Sm II	2	-	Ks	8742.29	Se I	-	[15]	Rd	8698.51	Br I	-	[10]	Ks
8788.83	Lu	4	-	Me	8740.96	Cb	20	-	Me	8697.55	Cb	40	-	Me
8786.77	Re	40 Wl	-	Me	8740.93	Mn I	500 W	-	Me	8697.50	Kr I	-	[40]	Me
8786.23	Zr I	2	-	Ks	8740.44	W	10	-	-	8697.26	Re	20 w	-	Me
8785.88	Xe	-	[4 wh]	Hu	8739.51	A I	-	[3]	Me	8696.86	Xe I	-	[200]	Me
8785.06	Eu	5	-	Kn	8739.372	Xe I	-	[300]	IMe	8694.71	S I	-	[200]	Fh
8784.59	A I	-	[30]	Me	8737.74	Ba II	2 h	-	Me	8694.01	S I	-	[20]	Fh
8784.44	Fe I	5	-	Me	8737.32	Mn I	150 w	-	Me	8693.94	Ra I	-	[5]	Rs
8783.755	Ne I	-	[1000]	IMe	8737.31	Ti I	7	-	Me	8692.33	Ti I	100	-	-
8783.71	Hg I	-	[10]	Su	8737.28	F I	-	[5]	En	8692.20	Xe I	-	[100]	Me
8782.46	Eu	15	-	Kn	8736.63	A I	-	[20]	Me	8691.28	U	4	-	-
8782.01	Ne I	-	[50]	Me	8736.19	A I	-	[2]	Me	8690.23	Lu	3 h	-	Me
8781.98	La II	2	-	Me	8735.7	Sb	40 Wh	-	-	8690.19	Kr II	-	[20 hs]	Me
8780.622	Ne I	-	[1000]	IMe	8734.86	Zr I	4	-	Ks	8690.12	A I	-	[2]	Me
8780.25	Kr I	-	[30]	Me	8734.69	Ti I	70	-	-	8688.633	Fe I	150	-	Me
8778.75	Ne I	-	[150]	Me	8734.60	Mn I	30	-	Me	8687.46	Cr I	8	-	-
8778.71	Ti I	30	-	-	8733.27	Co I	10 h	-	Me	8686.67	Hg I	-	[6]	Su
8778.45	Hg I	-	[7]	Su	8732.15	Cr I	2	-	-	8686.38	N I	-	[5]	Ks
8777.75	F I	-	[10]	En	8729.80	Mn I	2 h	-	Me	8686.30	Cl I	-	[15]	Ks
8777.42	W	5	-	-	8729.1	Fe I	2	-	Me	8685.910	In II	-	[2]	Ps
8776.749	Kr I	-	[5000]	IMe	8729.07	N I	-	[2]	Ks	8683.75	Re	8	-	Me
8776.41	W	3	-	-	8729.02	Si I	5 w	-	Ks	8683.61	N I	-	[8]	Ks
8774.56	Al I	100	-	Ms	8728.73	U	2	-	-	8682.99	Ti I	125	-	-
8774.05	Kr I	-	[50]	Me	8728.38	Si	10 w	-	Ks	8682.7	Sb	100 h	-	Me
8773.91	Al I	-	[150]	Ps	8727.78	Eu	40	-	Kn	8682.	Bi II	-	[18]	Cf
8773.54	Cr I	3 h	-	-	8726.54	Kr I	-	[8]	Me	8681.920	Ne I	-	[500]	IMe
8773.11	Hg I	-	[10]	Su	8725.76	Ti I	6	-	Me	8681.7	Sn	50 Wh	-	Me
8773.00	Kr I	-	[4]	Me	8724.98	Ru	3	-	Me	8680.45	S I	-	[200]	Fh
8772.88	Al I	-	[80]	Ps	8723.1	Pb II	-	8	Ea	8680.36	Al II	-	[8]	Ps
8772.49	Re	2	-	Me	8721.64	Re	6 W	-	Me	8680.35	N I	-	[12]	Ks
8772.08	Ce I	9	-	Ks	8720.41	La I	12 w	-	-	8680.33	Re	3	-	Me
8771.88	A II	-	[100]	Bn	8719.85	Sb	10	-	Me	8680.27	Al II	-	[10]	Ps
8771.70	Ne I	-	[400]	Me	8719.7	Pb II	-	[15]	Ea	8680.24	Mn I	2 h	-	Me
8771.2	Te I	-	[8]	Rd	8719.56	Ti I	30	-	-	8680.2	Ni	2	-	Me
8770.68	Ni I	2	-	Me	8719.20	Rn I	-	[4]	Rs	8679.61	S I	-	[5]	Fh
8769.57	Cb	7	-	Me	8718.99	N I	-	[3]	Ks	8679.491	Ne I	-	[500]	IMe
8767.97	Cb	12	-	Me	8718.66	Cr I	8 h	-	-	8679.13	Se II	-	[2]	Mz
8767.96	Mn I	5 h	-	Me	8717.89	Sm II	50 d	-	Kn	8678.43	A I	-	[60]	Me
8767.92	La	4	-	Me	8717.29	Mn I	2 h	-	Me	8677.93	Sm	30 d	-	Kn
8767.55	Ne I	-	[15]	Me	8717.09	Cb	4	-	Me	8676.7	Cl I	-	[5]	Mj
8767.12	Cr I	2	-	Ks	8716.58	Ni I	3	-	Me	8675.83	Rn I	-	[15]	Rs
8766.68	Si I	3 w	-	Ks	8716.43	Hg	-	[5]	Su	8675.65	Re I	50 Wl	-	Me
8766.64	Ti I	70	-	Me	8716.19	Xe II	-	[30 h]	Hu	8675.39	Ti I	150	-	-
8766.55	Co I	2 h	-	Me	8715.7	Ro	2 W	-	Me	8675.28	Al II	-	[2]	Ps
8764.112	Kr I	-	[150]	IMe	8715.62	Hf	2	-	Me	8675.12	Co I	10 h	-	Ps
8764.000	Fe I	100	-	Me	8714.52	Ne I	-	[5]	Gr	8674.92	Al II	-	[5]	Ps
8763.02	Hg I	-	[10]	Su	8713.79	A I	-	[5]	Me	8674.751	Fe I	50	-	Me
8761.72	A I	-	[200]	Me	8713.62	Kr I	-	[2]	Me	8674.43	La I	50 w	-	-
8761.53	Bi	100 wh	-	Me	8713.19	Fe I	10	-	Me	8673.97	Mn I	100 w	-	Me
8761.50	Ti I	15	-	-	8712.78	Lu	3	-	Me	8673.8	Ti II	-	[2]	El
8761.38	Cs I	500	-	Me	8711.78	N I	-	[3]	Ks	8673.48	Kr I	-	[2]	Me
8761.35	Pd I	2	-	-	8711.54	Xe I	-	[2]	Me	8672.11	La I	25 w	-	-
8760.14	Xe	-	[6 wh]	Hu	8711.24	Hf	7	-	Me	8672.06	Mn I	80 w	-	Me
8758.28	Sm II	2	-	Ks	8710.82	Ba I	2 h	-	Me	8671.35	S I	-	[2]	Fh
8758.20	Xe I	-	[100]	Me	8710.77	U	4 h	-	-	8671.28	Al II	-	[2]	Ps
8758.06	Hg I	-	[10]	Su	8710.75	W	5	-	-	8670.92	Mn I	60 wl	-	Me
8757.8	Te I	-	[50]	Rd	8710.29	Fe I	20 h	-	Me	8670.65	S I	-	[5]	Fh
8757.75	U	4	-	-	8710.21	Mn	10	-	Me	8668.61	Gd	4	-	Ks
8757.192	Fe I	50	-	Me	8710.1	Pb II	-	[30]	Ea	8668.42	S I	-	[5]	Fh
8755.20	Kr I	-	[30]	Me	8709.64	Xe I	-	[40]	Me	8667.943	A I	-	[400]	IMe
8754.92	Bi I	40	-	Me	8709.24	Zr I	2	-	Ks	8667.1	Sb	20 h	-	Me
8754.75	W	3 h	-	-	8708.43	Sm II	60 d	-	Kn	8666.31	Mn I	2 h	-	Me
8753.69	U	2	-	-	8708.3	Sn	20 Wh	-	Me	8665.20	Eu	8	-	Kn
8753.45	Cr I	2	-	-	8708	bh C	-	-	L	8664.93	I I	-	[6]	Ev
8752.17	Si I	200	-	Ks	8707.97	Cr I	9	-	-	8664.66	Mn I	2 h	-	Me
8752.14	Xe	-	[7 wh]	Hu	8707.61	Kr II	-	[2 h]	Me	8664.1	Ti II	-	[30]	El
8751.91	Hg I	-	[7]	Su	8707.37	Cr I	5	-	-	8662.140	Ca II	1000	-	IWG
8751.6	Eu	4	-	Kn	8706.41	Hg I	-	[5]	Su	8661.908	Fe I	100	-	Me
8750.45	Re	3	-	Me	8706.32	Sm II	30	-	Kn	8661.09	Co I	60	-	-
8750.113	Co I	15 h	-	Me	8704.51	Hg I	-	[7]	Su	8659.52	U	2	-	-
8749.5	Eu	2	-	Kn	8704.47	Eu	10	-	Kn	8659.38	Mn I	10 h	-	Me
8749.48	Zr I	5	-	Ks	8704.15	Ne I	-	[200]	Me	8657.85	V	5	-	-
8748.38	La I	25	-	-	8704.12	I II	-	[8]	Mu	8656.32	N I	-	[3]	Ks
8747.32	Fe I	2	-	Me	8703.76	Mn I	200 w	-	Me	8655.72	Xe	-	[3 wh]	Hu
8747.29	Kr I	-	[2]	Me	8703.42	N I	-	[3]	Ks	8655.17	S I	-	[2]	Fh
8746.60	W	10	-	-	8703.11	La I	5	-	-	8654.63	Mn I	40 h	-	Me

8654.5—8514.6 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities			
		Arc	Spk.	[Dis.]	R		Arc	Spk.	[Dis.]	R		Arc	Spk.	[Dis.]	R
8654.51	Ne I	-	-	[400]	Me	8607.51	Yb	8	-	Me	8566.21	Fe	2	-	Bu
8654.383	Ne I	-	-	[2000]	IMe	8606.45	Ni I	2	-	Me	8565.53	Ti I	25	-	-
8654.16	As I	100	-	-	Me	8605.85	Kr I	-	[40]	Me	8564.71	As I	100	-	Me
8654.07	Ba I	40	-	-	Me	8605.78	A I	-	[150]	Me	8562.56	Cr I	8	-	Ks
8653.	Bi II	-	-	[60]	Cf	8604.98	V	5 h	-	Me	8561.70	Gd	4	-	Ks
8652.79	U	2	-	-	-	8604.23	Xe	-	[30 hw]	Hu	8561.38	A I	-	[3]	Me
8652.74	Hg I	-	-	[10]	Su	8604.04	A II	-	[8]	Bn	8560.89	Kr I	-	[50]	Me
8652.2	bh Ca	20	-	-	L	8603.88	Re	6	-	Me	8560.54	Cb	30	-	Me
8651.49	Kr I	-	-	[8]	Me	8603.24	Hf	2	-	Me	8559.95	Ba I	400	-	-
8650.82	La II	1 h	2	-	Me	8603.03	Mn	3	-	Me	8559.07	Co I	10	-	-
8649.3	Sn	20 hl	-	-	Me	8600.98	Ti I	25	-	Me	8558.64	Zr I	2	-	Ks
8648.97	Re I	30 Wl	-	-	Me	8600.34	Mn I	5 Wh	-	Me	8558.63	Mn I	8 h	-	Me
8648.89	Si	100 hl	-	-	Ks	8600.07	Rn I	-	[100]	Rs	8557.73	Br I	-	[5]	Ks
8648.54	Xe I	-	-	[200]	Me	8599.5	Te I	-	[5]	Rd	8557.50	Re	2	-	Me
8647.59	Ce	5	-	-	Ks	8599.10	Pd I	2	-	-	8557.34	U	2	-	-
8647.05	Ne I	-	-	[300]	Me	8598.94	V I	4	-	-	8557.04	Hg I	-	[6]	Su
8643.61	Re I	15	-	-	Me	8598.84	Ni I	2	-	Me	8556.64	Si I	100 h	-	Ks
8643.48	Nd	2	-	-	-	8598.21	Fe	3	-	Bu	8555.50	Cr I	8	-	-
8643.07	Cr I	15	-	-	-	8598.18	Ti I	60	-	Me	8554.61	Re	4	-	Me
8642.76	Zr I	2	-	-	Ks	8597.19	Eu	10	-	Kn	8554.42	Zr	2	-	Ks
8642.7	bh Ca	2	-	-	L	8597.00	Si I	2 hl	-	Ks	8553.97	Xe I	-	[2]	Me
8642.69	Eu	300	-	-	Kn	8596.09	Co I	3 h	-	Me	8552.60	Sn I	500	-	Me
8642.61	V	4	-	-	Me	8595.91	Kr	-	[2 wh]	Me	8551.48	V I	3	-	Me
8641.69	Eu	10	-	-	Kn	8595.84	Ta	4 h	-	-	8550.6	Pb II	-	[5]	Ea
8641.54	W	8	-	-	-	8594.85	Nd	2	-	-	8550.54	Ti I	25	-	Me
8641.47	Ti	40	-	-	Me	8594.37	W	20	-	-	8550.50	Cl I	-	[8]	Ks
8641.12	U	2	-	-	-	8594.34	N I	-	[3]	Ks	8550.49	Ta	3	-	-
8641.01	Zr	4	-	-	Ks	8593.62	Re	3	-	Me	8548.86	Cr I	15	-	-
8640.70	Al II	-	-	[30]	Ps	8593.47	Ba I	2	-	Me	8548.2	Hg II	-	[10]	Rs
8640.06	Hf	15	-	-	Me	8593.1	Kr I	-	[10]	Me	8548.12	Ti I	100	-	-
8639.9	bh V	-	-	-	L	8591.258	Ne I	-	[400]	IMe	8547.25	Cb	20	-	Me
8639.76	Rn I	-	-	[10]	Rs	8591.06	V	5 w	-	-	8546.48	Hf	20	-	Me
8638.66	Br I	-	-	[25]	Ks	8590.94	La I	5	-	-	8545.44	La I	35	-	-
8638.47	La I	10	-	-	-	8590.07	Hg I	-	[2]	Su	8545.0	Pb II	-	[30]	Ea
8637.62	U	2	-	-	-	8589.73	Co I	50	-	-	8544.70	Ne I	-	[60]	Me
8637.04	Ni I	5	-	-	Me	8588.52	Re	3	-	Me	8544.52	Bi I	40	-	Me
8636.38	Ti	18	-	-	Me	8587.84	Zr I	4	-	Ks	8543.9	Pr	3	-	It
8636.28	Cr I	10	-	-	-	8586.74	Co I	30	-	-	8543.72	Cr I	2	-	Ks
8635.31	Ne I	-	-	[50]	Me	8586.00	O	-	[15]	Fh	8543.46	La I	20	-	Me
8634.65	Se	-	-	[2]	Bt	8585.99	Cl I	-	[30]	Ks	8543.22	Sm II	150 d	-	Kn
8634.648	Ne I	-	-	[600]	IMe	8585.60	S	-	[200]	Ms	8542.12	Eu	100	-	Kn
8633.18	S I	-	-	[30]	Fh	8585.06	W	50	-	-	8542.089	Ca II	1000	-	IWg
8633.10	Re	3 Wl	-	-	Me	8584.21	Zr I	10	-	Ks	8541.97	V I	20	-	-
8632.9	Ti II	-	-	[15]	El	8584.12	Hf	5 h	-	Me	8541.65	As I	50	-	Me
8632.83	Sm II	40 d	-	-	Ks	8584.0	Cu I	2 w	-	Ks	8540.20	U	4	-	-
8632.1	Te I	-	-	[7 w]	Rd	8583.01	Cr I	10	-	Ks	8539.38	Ti I	60	-	-
8631.7	Eu	2	-	-	Kn	8582.91	Ne I	-	[60]	Mo	8539.22	Sm II	10 d	-	Kn
8630.66	Re	8	-	-	Me	8582.50	Hg I	-	[6]	Su	8538.87	Hg I	-	[3]	Su
8629.61	N I	-	-	[10]	Ks	8582.267	Fe I	8	-	Me	8538.16	V	5 r	-	-
8629.33	Ti	18	-	-	Me	8582.08	Pd I	2	-	-	8537.93	Kr I	-	[40]	Me
8628.94	Xe II	-	-	[20 h]	Hu	8581.98	Ba I	50 hl	-	Me	8537.80	Cr I	6 h	-	Ks
8628.44	Re	5	-	-	Me	8581.88	Hf II	1	5	Me	8537.38	Re	2	-	Me
8628.0	Bi	100 Wh	-	-	Me	8580.48	V I	8 h	-	-	8536.80	Si	3 w	-	Ks
8627.96	Rn I	-	-	[5]	Rs	8580.04	Ni I	2	-	Me	8534.99	Re	3 W	-	Me
8626.60	S I	-	-	[2]	Fh	8579.81	Bi I	20	-	Me	8534.49	V I	30	-	-
8625.40	Br I	-	-	[6]	Ks	8579.49	A I	-	-	Me	8532.74	Pd I	2	-	-
8624.86	V	2 l	-	-	-	8579.15	Si	2 w	-	Ks	8532.	Bi II	-	[80]	Cf
8624.82	Kr I	-	-	[4 h]	Me	8578.42	Ti I	15	-	Me	8531.36	Ti I	15	-	Me
8624.24	Xe I	-	-	[80]	Me	8578.06	A I	-	[5]	Me	8530.99	W	2	-	-
8624.22	La I	5	-	-	Me	8577.95	Cl I	-	[2]	Ks	8530.10	Xe I	-	[30]	Me
8623.40	I II	-	-	[6]	Mu	8577.85	W	2	-	-	8529.67	La	3	-	-
8622.27	Sm II	15 d	-	-	Kn	8576.01	Xe I	-	[200]	Me	8528.94	Yt I	4	-	Me
8621.612	Fe I	5	-	-	Me	8575.87	Cb	30	-	Me	8527.79	Gd	4	-	Ks
8621.55	La	2	-	-	Me	8575.77	Yt I	2	-	Me	8527.73	Re I	300 Wl	-	Me
8620.47	A I	-	-	[100]	Me	8575.35	Co I	50	-	-	8526.99	Cb	50	-	Me
8619.52	Sb	150 h	-	-	Me	8575.27	Cl I	-	[25]	Ks	8526.685	Fe I	3	-	Me
8618.96	U	2	-	-	-	8574.61	U	2	-	-	8526.36	Ti	8	-	Me
8618.42	Ti I	20	-	-	-	8574.57	Co I	50	-	-	8525.99	Ti	8	-	Me
8618.14	Ti	15	-	-	Me	8572.61	Sb	200	-	Me	8524.99	Zr I	4	-	Ks
8617.7	Sb	40 h	-	-	Me	8571.36	Ne I	-	[100]	Me	8522.55	Xe I	-	[30]	Me
8617.15	S I	-	-	[5]	Fh	8571.05	Zr I	4	-	Ks	8521.96	Ba I	2	-	Me
8617.03	Sm II	50 d	-	-	Kn	8570.71	Re	15	-	Me	8521.57	Mn I	10 h	-	Me
8615.66	Zr I	4	-	-	Ks	8570.51	U	4	-	-	8521.441	A I	-	[2000]	IMe
8614.48	W	8	-	-	-	8569.77	Ti I	50	-	-	8521.4	Te I	-	[12]	Rd
8614.45	Cb	20	-	-	Me	8569.72	Co I	18	-	Me	8521.10	Cs I	5000 R	-	Me
8613.58	Hg I	-	-	[6]	Su	8569.02	Kr I	-	[20]	Me	8520.95	Rn I	-	[20]	Rs
8613.26	W	15	-	-	-	8569.0	Hf	3 d	-	Me	8518.32	Ti I	100	-	-
8612.91	Ti I	7	-	-	Me	8568.94	Sm	8 d	-	Kn	8518.05	Ti I	60	-	Me
8612.73	U	2	-	-	-	8568.54	Zr I	4	-	Ks	8516.37	W	5	-	-
8612.62	Ce	5	-	-	Ks	8568.39	Se II	-	[2]	Rd	8515.39	W	5	-	-
8611.807	Fe I	10	-	-	Me	8568.04	N I	-	[3]	Ks	8515.19	Xe	-	[30 hw]	Hu
8610.98	Lu	125	-	-	Me	8567.73	U	2	-	-	8515.11	Fe I	2	-	-
8610.24	Zr I	4	-	-	Ks	8567.58	Ba I	5 h	-	Me	8515.06	Zr I	4	-	Ks
8609.26	Cu II	-	-	3	Sh	8566.94	U	2	-	-	8514.65	La II	3	3	Me
8607.94	U	8	-	-	-	8566.28	Br	-	[6]	Ks	8514.63	Eu	8	-	Kn

Wave-length	Element	Intensity Arc Spk., [Dis]	R	Wave-length	Element	Intensity Arc Spk., [Dis]	R	Wave-length	Element	Intensity Arc Spk., [Dis]	R
8514.28	Ba I	40 h	-	8469.8	Te I	-	[7]	8422.72	Sn	300 hl	-
8514.075	Fe I	10	-	8468.50	Ti I	300	-	8421.39	V I	8	-
8513.78	Zr I	6	-	8468.413	Fe I	20	-	8418.70	Ti	8	-
8513.57	La I	8	-	8467.62	La I	5	-	8418.427	Ne I	-	[400]
8513.52	Co I	5 h	-	8467.38	Ce	2 w	-	8418.16	Hg I	-	[5]
8513.38	Br I	-	[5]	8467.32	Cl I	-	[8]	8417.54	Ti I	15	-
8511.85	Hg	-	[4]	8467.15	Ti I	300	-	8417.24	Ni I	8	-
8511.04	Cu II	-	40	8465.08	Sm	8	-	8417.18	Ne I	-	[100]
8510.97	Cr I	8	-	8464.92	Kr II	-	[4 hlw]	8417.14	Re I	300	-
8510.90	Sm II	200 d	-	8464.75	Eu	50	-	8417.08	W	8	-
8510.6	Pr	3	-	8464.65	Zr I	4	-	8417.08	Cb	4	-
8510.38	Zr I	2	-	8464.07	Hg	-	[4]	8416.98	Ti I	35	-
8508.870	Kr I	-	[3000]	8463.37	Ne I	-	[150]	8416.61	Dy	2	-
8508.08	Lu	100	-	8461.894	In II	-	[2]	8416.49	V I	8	-
8507.72	Re	6 s	-	8460.96	Ti	10	-	8415.73	Ta	10	-
8507.37	La I	7	-	8460.01	Hf	10	-	8414.74	Cb	2	-
8506.92	W	6	-	8459.19	Lu	150	-	8414.58	Ba I	4 hl	-
8506.77	Sm	10 d	-	8457.77	Sm II	30 d	-	8414.38	V I	8	-
8505.65	V I	10	-	8457.6	Sn	10 wh	-	8414.130	In II	-	[2]
8505.51	Hg I	-	[10]	8457.48	Zr I	2	-	8414.00	Zr I	4 h	-
8505.19	K I	2	-	8457.10	Ti I	25	-	8413.623	In II	-	[2]
8505.06	V I	4	-	8456.80	Nd	2	-	8413.083	In II	-	[5]
8504.70	U	4	-	8455.24	Cr I	2	-	8412.428	Kr I	-	[100]
8503.51	K I	3	-	8454.76	Sm	20	-	8412.36	Ti I	300	-
8503.46	Cu II	-	15	8453.17	Zr I	2	-	8412.319	In II	-	[3]
8503.35	Re	3	-	8452.18	S I	-	[70]	8411.70	Sb	60	-
8503.17	Si	5 d	-	8451.55	S I	-	[3]	8409.88	Mn I	10 h	-
8502.98	V I	5 d	-	8450.89	Ti I	70	-	8409.30	Pb	5 Wh	-
8502.38	Si I	30 w	-	8450.60	Rn I	-	[5]	8409.24	Kr	-	[3]
8501.81	Ni I	2	-	8450.47	Se I	-	[15]	8409.189	Xe I	-	[2000]
8501.8	Bi	2 Wh	-	8450.36	Yt I	8	-	8409.03	Co I	10 Wh	-
8501.50	Si I	20 w	-	8450.26	Cr I	3	-	8408.50	Zr I	2 h	-
8501.02	Xe	-	[2]	8450.1	Eu	2	-	8408.23	V I	5 h	-
8500.8	Te I	-	[8]	8450.03	U	4	-	8408.21	Lu	8	-
8499.54	W	2 h	-	8449.8	Sm	10 d	-	8408.208	A I	-	[2000]
8499.52	V I	40	-	8449.57	S I	-	[30]	8408.15	Cu I	3 w	-
8498.44	Zr I	20	-	8447.62	Ta	70	-	8408.01	Sc	2 h	-
8498.21	Kr I	-	[30]	8447.	Sb II	-	10	8407.87	Ti	4	-
8498.018	Ca II	300	-	8446.55	Br I	-	[50]	8406.23	Cb	15	-
8497.00	Fe I	2	-	8446.38	O I	-	[2000]	8406.2	Hg II	-	[5]
8496.64	A I	-	[2]	8445.8	Ti II	-	[15]	8406.14	Cl I	-	[2]
8496.04	Ti I	60	-	8445.45	Gd	4	-	8403.58	Re	3	-
8495.98	Zr I	4	-	8445.35	U	4	-	8402.81	V	20	-
8495.64	Ce	3	-	8444.48	Si I	3 w	-	8402.55	W	2	-
8495.51	Ti	15	-	8444.00	Si I	15 w	-	8402.54	Ti I	12	-
8495.360	Ne I	-	[500]	8443.58	Hg I	-	[4]	8402.03	Xe I	-	[5]
8495.12	W	8	-	8443.44	A I	-	[20]	8401.56	Hg I	-	[7]
8494.89	Rn I	-	[10]	8442.98	Ti I	12	-	8400.82	Nd	2	-
8494.42	Ti I	10	-	8442.58	Gd	4	-	8399.79	Re	8 w	-
8493.61	V I	6	-	8441.25	U	2	-	8399.35	A I	-	[20]
8492.47	Hg I	-	[5]	8440.55	Se I	-	[15]	8399.18	U	2	-
8492.2	Te I	-	[8]	8440.06	La	3	-	8398.24	Gd	4	-
8490.30	A I	-	[40]	8439.77	Cb	25	-	8397.04	Cr I	6	-
8489.50	Co I	30	-	8439.603	Fe I	5	-	8396.87	Ti I	200	-
8487.48	Rn I	-	[10]	8438.93	Ti I	100	-	8396.66	U	2	-
8486.77	W	3	-	8438.57	Dy	2	-	8395.87	Mn I	10 h	-
8486.16	I I	-	[4]	8437.71	A I	-	[6]	8395.6	Pb II	-	[100]
8485.99	Sm II	400 d	-	8437.65	Sm II	15 d	-	8394.74	Nd	2	-
8485.	bh C	-	-	8437.55	Xe I	-	[10]	8393.86	Sm	15 d	-
8484.45	Ne I	-	[80]	8436.9	Ti II	-	[4]	8393.42	I I	-	[7]
8484.01	La II	2	-	8435.70	Ti I	150	-	8392.37	Xe I	-	[20]
8483.39	Mo	2	-	8434.94	Ti I	200	-	8392.28	A I	-	[80]
8483.36	Cr I	3 h	-	8434.776	In II	-	[2]	8391.96	Cl II	-	[3]
8483.16	Ti I	20	-	8434.324	In II	-	[3]	8391.96	Dy	5	-
8482.64	Xe II	-	[8 h]	8434.31	Cb	2 h	-	8391.6	Eu	2	-
8481.70	Mn	3	-	8433.90	Re I	4 W	-	8391.31	Sn I	20 hl	-
8478.88	Pb	10 Whl	-	8433.90	Cb	4 h	-	8390.89	U	2	-
8478.50	Lu	50	-	8432.64	Sm II	200	-	8390.30	Sm II	15 d	-
8478.45	Co I	8	-	8431.91	W	5	-	8390.18	Zr I	2	-
8477.47	Br I	-	[20]	8431.63	V I	12 h	-	8389.9	Ti II	-	[8]
8477.26	Cu II	-	10	8431.20	Mn I	15 h	-	8389.46	Ti I	25	-
8477.20	Kr I	-	[2]	8430.87	Re	2 d	-	8389.41	Zr I	6	-
8476.48	La I	25	-	8428.94	As I	100	-	8389.32	Mo	150	-
8475.98	Cb	150	-	8428.342	O I	-	[15]	8389.17	U	4	-
8475.64	Yt I	3	-	8428.27	Cl I	-	[30]	8389.06	Ta	10	-
8475.16	W	10	-	8427.1	Sm	8 d	-	8388.	Bi II	-	[40]
8473.64	Ru I	2	-	8426.70	U	2	-	8387.88	Cb	4 h	-
8473.54	Sm II	100 d	-	8426.52	Ti I	200	-	8387.781	Fe I	35	-
8473.31	Kr II	-	[20 hl]	8426.326	O I	-	[50]	8387.77	Sm II	100 d	-
8472.9	Sm	4	-	8425.56	Sm II	8 d	-	8387.16	U	4	-
8472.01	Tm	30	-	8425.51	Rh I	3	-	8386.70	Zr I	2	-
8471.58	Br	-	[3]	8424.647	A I	-	[2000]	8386.68	Nd	2	-
8470.95	W	5	-	8424.41	Ti I	35	-	8384.90	Kr I	-	[15]
8470.72	Ne I	-	[5]	8423.10	Ti I	15	-	8384.73	A I	-	[60]
8469.96	Kr I	-	[2 h]	8423.05	Hg I	-	[5]	8384.02	Br I	-	[5]

8383.7—8275.9 A.

Wave-length	Element	Intensities Arc Spk., [Dis]	R	Wave-length	Element	Intensities Arc Spk., [Dis]	R	Wave-length	Element	Intensities Arc Spk., [Dis]	R
8383.71	Sm	150 d	-	8349.14	Se	-	[2]	8316.04	La I	15	-
8382.98	Hf	2	-	8349.05	Xe I	-	[40]	8315.45	Sm	150	-
8382.87	W	2	-	8348.98	Ru I	15	-	8315.35	Co I	20	-
8382.82	Ti I	200	-	8348.76	W	10	-	8315.04	Gd	4 w	-
8382.76	Cl II	-	[5]	8348.68	Sm II	150 d	-	8315.01	Hg I	-	[2]
8382.54	Ti I	300	-	8348.28	Cr I	20	-	8314.73	S	-	[200]
8382.08	Lu	30	-	8347.45	Xe I	-	[60]	8314.51	Rn I	-	[8]
8381.86	U	4	-	8347.24	Xe II	-	[50]	8314.25	Sb	15 h	-
8381.05	Rn I	-	[10]	8346.822	Xe I	-	[2000]	8313.02	Re	5 W	-
8380.77	Mn	25	-	8346.74	U	2	-	8312.85	Ti I	40	-
8379.80	La I	7	-	8346.53	La I	70	-	8312.71	Sm II	15 d	-
8379.47	Co I	35	-	8346.36	Nd	8	-	8311.76	Ti I	35	-
8378.54	Cr I	8	-	8346.3	Pd	-	2	8311.57	W	5	-
8378.39	Co I	50	-	8346.08	Cb	60	-	8310.26	Ce	4	-
8378.3	Xe II	-	[5 h]	8345.57	F I	-	[5]	8309.52	Se II	-	[3]
8377.85	Ti	200	-	8345.55	Co I	20 h	-	8309.50	Zr I	2	-
8377.607	Ne I	-	[800]	8345.23	Sn	10 h	-	8307.75	Nd	5	-
8376.41	Ne I	-	[200]	8344.80	Mn	2	-	8307.41	Ti I	60	-
8376.3	Cl I	-	[9]	8344.63	Sm	5	-	8306.80	Si I	4 w	-
8376.1	Ti I	2	-	8344.43	Yt I	7	-	8306.31	Ti I	50	-
8375.97	Cl I	-	[40]	8344.25	Hf	8	-	8305.91	Hf II	2	4
8375.93	Kr	-	[5]	8344.70	Br I	-	[20]	8305.90	Zr I	14	-
8375.31	Se I	-	[8]	8342.95	Fe I	2	-	8305.79	Sm II	500 d	-
8375.21	Nd	2	-	8342.63	Co I	50 Wh	-	8305.62	As I	50	-
8373.93	Mn	4 h	-	8342.03	V I	50	-	8304.42	Mn	5 h	-
8373.21	Hg I	-	[5]	8340.03	Se I	-	[4]	8303.20	Kr I	-	[10]
8372.84	Co I	80 h	-	8339.431	Fe I	18	-	8303.17	Cr I	5	-
8372.79	Xe I	-	[5]	8338.83	Cr I	5	-	8302.88	La I	7	-
8372.26	Sm II	25 d	-	8338.6	Sn	10 Wl	-	8302.73	Nd	3	-
8371.90	Ce	8 s	-	8338.43	Si I	5 w	-	8302.40	F I	-	[10]
8371.39	Cb	4 h	-	8338.12	Hf	2	-	8301.87	Pt I	2	-
8371.38	Xe I	-	[3]	8338.01	W	15	-	8301.54	Ne I	-	[150]
8370.23	Zr I	4	-	8337.46	U	2	-	8301.45	Co I	5 h	-
8369.08	Sm	5 d	-	8336.81	Cr I	10	-	8301.39	Kr I	-	[20]
8369.07	W	3	-	8336.63	Nd	2	-	8301.34	Sm	100	-
8367.03	A I	-	[3]	8335.7	Eu	4	-	8301.01	Re	20 w	-
8366.4	Xe	-	[25 h]	8335.19	C I	-	[150]	8300.88	Sm II	80 d	-
8365.98	Zr I	2	-	8335.07	Ra	-	[7]	8300.83	Pd I	6	-
8365.75	Ne I	-	[150]	8335.0	Pb II	-	[25]	8300.70	Ce	4	-
8365.642	Fe I	15	-	8334.69	Br I	-	[20]	8300.326	Ne I	-	[600]
8365.64	Yt I	2	-	8334.41	La	5	-	8299.95	Co I	60 h	-
8364.24	Ti I	150	-	8334.37	Ti I	70	-	8299.81	Zr I	4 h	-
8363.82	Ce	2 h	-	8333.31	Cl I	-	[30]	8298.6	Eu	2	-
8363.52	Al II	-	[30]	8332.44	Zr I	2	-	8298.59	F I	-	[18]
8363.30	Al II	-	[2]	8332.21	A I	-	[20]	8298.46	Sm	8	-
8362.39	Nd	2	-	8332.00	Nd	3	-	8298.108	Kr I	-	[5000]
8361.99	Se II	-	[2 h]	8331.941	Fe I	20	-	8297.71	Xe I	-	[15]
8361.81	Cl II	-	[8]	8331.69	Co I	20	-	8297.58	Cr	3	-
8361.78	Hf	4	-	8331.6	Eu	2	-	8297.55	Xe	-	[50 h]
8361.7	He I	-	[3]	8331.23	V I	40	-	8297.07	Yt	2	-
8361.17	Zr I	2	-	8330.48	Th	6	-	8296.90	Cr I	4	-
8360.822	Fe I	8	-	8329.73	U	2	-	8296.85	Co I	50 h	-
8360.63	Cl II	-	[15]	8329.61	Yt I	5	-	8296.54	Zr I	2	-
8360.3	h Cr	-	-	8329.45	Lu	5	-	8295.5	Pd	-	3
8360.17	Zr I	2 h	-	8329.44	Xe	-	[25 hw]	8293.73	Re	20	-
8359.87	W	4	-	8328.44	Mo	100	-	8293.527	Fe I	8	-
8359.57	Al II	-	[40]	8328.	Bi II	-	[40]	8291.88	A I	-	[8]
8359.23	Al II	-	[2]	8327.79	U	2	-	8291.1	Te I	-	[10]
8358.67	W	15	-	8327.063	Fe I	40	2	8290.62	Cr I	10	-
8357.59	Re	25	-	8326.04	Dy	5	-	8289.26	Sm II	125 d	-
8357.07	U	2	-	8325.39	Ba I	25	-	8289.0	Sb	30 h	-
8357.04	Sn I	80	-	8325.38	Sm	10	-	8287.56	Kr I	-	[4 h]
8355.8	Te I	-	[15]	8324.69	La I	80	-	8287.46	Hg I	-	[2]
8355.23	Sm	10 d	-	8324.58	Xe I	-	[20]	8287.38	Cr I	25	-
8355.00	As I	10	-	8324.49	Nd	5	-	8286.33	Cr	2 h	-
8354.35	Al II	-	[50]	8324.42	V I	30	-	8285.72	Cr	2	-
8354.00	Re	2	-	8323.90	Xe I	-	[2]	8285.70	Xe II	-	[20 h]
8353.97	Hg I	-	[2]	8323.44	Cr I	5	-	8285.13	Re	3 Ws	-
8353.79	Mn I	2 Wh	-	8322.99	Cr I	3	-	8285.00	Ba I	5 h	-
8353.58	Pd I	2	-	8322.06	Cr I	20 wh	-	8284.48	Mn I	4 h	-
8353.50	A I	-	[4]	8322.00	W	10	-	8283.81	Zr I	12	-
8353.15	Ti I	50	-	8321.09	Kr	-	[2]	8283.52	Nd	2	-
8353.00	Cl II	-	[2]	8320.93	Cb	500	-	8283.48	Co I	50 h	-
8352.94	Ru I	12	-	8320.86	Th	2	-	8283.21	Cu II	-	60
8352.39	Ce	2	-	8320.16	Zr I	2	-	8283.09	Ru	6	-
8351.3	Xe II	-	[3]	8320.09	Sm II	6	-	8282.85	Xe	-	[15 h]
8351.15	Mo	5	-	8318.55	Co I	5 Wh	-	8282.37	V I	80	-
8350.76	Ba I	2 h	-	8318.34	U	2	-	8281.62	Ta	50	-
8350.60	Se	-	[2]	8318.27	Cr I	5 Wh	-	8281.049	Kr	-	[1000]
8350.45	Zr I	4 h	-	8317.45	Si I	2 w	-	8280.39	V I	15	-
8350.25	W	3 h	-	8317.12	W	3	-	8280.116	Xe I	-	[5000]
8350.04	Cb	10 h	-	8317.10	Xe	-	[25 hw]	8277.60	Cu II	-	50
8349.77	Gd	4	-	8316.97	Zr I	2	-	8276.95	Hf	20	-
8349.74	Rn I	-	[6]	8316.38	Gd	4	-	8276.6	Te I	-	[10]
8349.35	Sn	30 h	-	8316.2	Xe	-	[10 hw]	8275.90	Fe I	6	-

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities			
		Arc	Spk.	[Dis]	R			Arc	Spk.	[Dis]	R			Arc	Spk.	[Dis]	R
8275.63	Th	5	-	-	Fd	8245.37	Xe	-	-	[4]	Hu	8214.30	Ni	2 h	-	-	Si
8275.55	Co I	8 h	-	-	-	8245.21	Ce	4	-	-	-	8214.12	Hg I	-	[12]	-	Su
8275.42	Gd	4	-	-	Ks	8245.06	Mo	30	-	-	Ks	8213.14	Nd	2	-	-	-
8274.62	F I	-	[15]	-	En	8243.95	Dy	2	-	-	Kn	8212.53	Zr I	25	-	-	-
8274.6	Eu	6	-	-	Kn	8243.7	Eu	3	-	-	-	8212.43	Mn	50 h	-	-	Me
8274.31	Fe	6	-	-	-	8242.47	N I	-	[15]	Ks	8212.03	Cl I	-	-	[20]	Ks	
8273.80	Cr I	3	-	-	Ks	8241.70	Sb	7	-	Me	8211.71	Yt I	2 h	-	-	Me	
8273.519	Ag I	5	-	-	IHz	8241.61	V I	60	-	-	8211.60	La	4 w	-	-	-	
8273.20	Cr	3	-	-	Ks	8241.13	Sc I	5	-	Me	8211.48	Si I	2	-	-	Ks	
8272.84	Pb	200 w	-	-	Me	8240.98	Sm II	150	-	Kn	8211.3	Cl I	-	[12]	-	Mj	
8272.77	Nd	2	-	-	-	8240.67	Cr I	2	-	Ks	8211.23	Cb	2 h	-	-	Me	
8272.46	Br I	-	[70 I]	-	Ks	8240.37	Zr I	8	-	-	8211.0	Eu	2	-	-	Kn	
8272.45	Se	-	[2]	-	Rd	8240.13	I I	-	[7]	Ev	8210.94	N I	-	[10]	-	Ks	
8272.38	Co I	5 h	-	-	-	8240.00	Cb	50	-	Me	8210.81	Bi I	5	-	-	Me	
8272.355	Kr I	-	[100]	-	IMe	8239.130	Fe I	5	-	Me	8210.24	Ba I	200	-	-	-	
8272.	bh C	-	-	-	L	8238.34	Cr I	8	-	-	8210.16	Mn I	2	-	-	Me	
8271.76	Hg I	-	[2]	-	Su	8237.90	La I	3 w	-	Me	8209.84	Eu	200	-	-	Kn	
8271.707	Rb I	100	-	-	IRz	8237.5	Eu	4	-	Kn	8208.66	Co I	80	-	-	-	
8271.410	Rb I	200	-	-	IRz	8236.13	Hf II	5	10	Me	8208.63	F I	-	[5]	-	En	
8270.96	Rn I	-	[100]	-	Rs	8235.89	Cr I	30	-	-	8208.25	Sm	60	-	-	Kn	
8270.12	Sb	10 h	-	-	Me	8235.408	O I	-	[50]	Fh	8207.767	Fe I	100	-	-	Me	
8269.38	Co I	80 h	-	-	-	8235.30	Cu II	-	[10]	Sh	8207.30	Ti I	20 h	-	-	-	
8269.03	Ra	-	[6]	-	Rs	8234.640	In II	-	[4]	Ps	8206.62	Kr I	-	[40]	-	Me	
8267.65	V I	2	-	-	-	8234.21	Ce	4 wh	-	-	8206.336	Xe I	-	[700]	-	IMe	
8267.45	Sm	40 d	-	-	Kn	8233.55	Dy	2	-	Ks	8206.30	Sm	80 d	-	-	Kn	
8267.11	Ne I	-	[80]	-	Me	8233.291	In II	-	[2]	Ps	8206.14	Hg I	-	[3]	-	Su	
8266.71	Nd	3	-	-	-	8233.085	O I	-	[1000]	Fh	8205.38	Nd	2	-	-	-	
8266.520	Xe I	-	[500]	-	IMe	8232.94	Fe	3	-	Bu	8205.22	Kr I	-	[20]	-	Me	
8266.076	Ne I	-	[200]	-	IMe	8232.600	In II	-	[2]	Ps	8204.58	Hf	20	-	-	Me	
8265.50	Dy	5	-	-	-	8232.347	Fe I	10	-	Me	8204.50	Mn	2	-	-	Me	
8264.96	Ru	25	-	-	-	8232.18	F I	-	[10]	En	8204.45	Pt I	4	-	-	-	
8264.95	Br I	-	[10]	-	Ks	8231.634	Xe I	-	[5000]	I	8203.98	Sm	80	-	-	Kn	
8264.85	Ta	40	-	-	-	8231.51	Nd	6	-	-	8203.32	La I	1	-	-	-	
8264.521	A I	-	[1000]	-	IMe	8231.23	Yt I	2 h	-	Me	8203.07	V I	100	-	-	-	
8264.27	Fe	20	-	-	Kn	8230.77	F I	-	[30]	En	8202.72	Kr II	-	[40 h]	-	Me	
8264.27	Cr I	2	-	-	Ks	8230.67	Si I	15	-	Ks	8201.73	Zr I	8	-	-	Ks	
8264.01	Ba I	3 h	-	-	Me	8230.33	Sm	100	-	Kn	8201.56	Dy	15	-	-	-	
8263.240	Kr I	-	[2000]	-	IMe	8230.016	O I	-	[1000]	Fh	8200.84	Hg I	-	[7]	-	Su	
8262.87	Re	6 w	-	-	Me	8229.99	Mn	2	-	Me	8200.59	N I	-	[2]	-	Ks	
8262.79	Nd	2	-	-	-	8228.98	Cb	2 h	-	Me	8200.23	Cl I	-	[10]	-	Ks	
8262.73	Xe	-	[25 h]	-	Hu	8228.89	Kr I	-	[10 h]	Me	8200.2	Cd I	5	-	-	Ps	
8262.41	Cb	2 h	-	-	Me	8227.680	O I	-	[1000]	Fh	8199.06	Cl I	-	[10]	-	Ks	
8262.05	U	4	-	-	-	8227.55	Pt I	3	-	-	8198.951	Fe I	20	-	-	Me	
8262.01	Cr I	10	-	-	-	8227.354	In II	-	[6]	Ps	8198.87	V I	60	-	-	Ks	
8261.11	Ce	8	-	-	-	8227.274	In II	-	[2]	Ps	8198.75	Dy	5	-	-	-	
8260.81	Xe	-	[5]	-	Hu	8227.26	Nd	2	-	-	8197.74	F I	-	[3]	-	En	
8259.380	Ne I	-	[150]	-	IMe	8226.977	In II	-	[4]	Ps	8197.4	Hg II	-	[2]	-	Wd	
8259.00	Pt I	2	-	-	-	8226.918	In II	-	[3]	Ps	8196.98	Sc I	3	-	-	Me	
8258.53	Yt	2	-	-	-	8226.871	In II	-	[2]	Ps	8196.73	Xe I	-	[2]	-	Me	
8258.27	S II	-	[4]	-	Bt	8226.82	Eu	100	-	Kn	8195.61	Hg I	-	[8]	-	Su	
8257.85	Sb	20 h	-	-	Me	8226.640	In II	-	[3]	Ps	8195.50	Sm II	200 d	-	-	Kn	
8257.78	bh Sr	51	-	-	L	8226.581	In II	-	[4]	Ps	8195.070	Kr I	4	-	[50]	IMe	
8256.90	Cu II	-	5	-	Sh	8226.08	Cb	2 h	-	Me	8194.87	Cr I	1	-	-	Ks	
8256.74	Se I	-	[2]	-	Rd	8225.67	Cr I	3	-	Ks	8194.83	V I	6	-	-	-	
8256.5	Sm	4	-	-	Kn	8225.15	S II	-	[4]	Bt	8194.811	Na I	1000 R	-	-	IHz	
8256.40	Xe	-	[20]	-	Hu	8224.74	Pt I	10	-	-	8194.78	Hf	8	-	-	Me	
8256.25	Re	3 w	-	-	Me	8224.72	A I	-	[6]	Me	8194.73	Zr I	20	-	-	Rd	
8255.88	V I	70	-	-	-	8224.41	Ba	6 h	-	Me	8194.61	Se I	-	[12]	-	Rd	
8255.07	A I	-	[50]	-	Me	8224.30	Re	2	-	Me	8194.6	F I	-	[12]	-	Di	
8254.10	Be I	100	-	-	Ps	8224.07	Cr I	8	-	-	8194.39	Cl I	-	[15]	-	Ks	
8254.0	Re I	4 W	-	-	Me	8223.61	Ce	4	-	-	8194.20	Tm	20	-	-	Me	
8253.8	Eu	6	-	-	Kn	8223.28	N I	-	[15]	Ks	8194.0	Ti II	-	[2]	-	El	
8253.51	V I	80	-	-	-	8222.69	Kr I	-	[6]	Me	8193.63	Rh I	10	-	-	Me	
8252.63	Hg I	-	[2]	-	Su	8222.65	I I	-	[5]	Ev	8193.03	Co I	125	-	-	-	
8251.90	I II	-	[4]	-	Mu	8221.829	O I	-	[2000]	Fh	8192.60	Mo	2	-	-	-	
8251.64	Mn	2	-	-	Me	8221.76	Cl I	-	[25]	Ks	8192.4	Kr I	-	[2]	-	Me	
8251.5	Te I	-	[10]	-	Rd	8220.47	Ru	7	-	-	8192.28	Cu II	-	30	-	Sh	
8250.22	K I	2	-	-	En	8220.45	Cl I	-	[15]	Ks	8191.43	Se I	-	[8]	-	Rd	
8250.03	Sn	8 hl	-	-	Me	8220.406	Fe I	5	3	Me	8191.24	F I	-	[5]	-	En	
8249.66	Nd	2	-	-	-	8218.76	Sm II	300	-	Kn	8190.75	Re	2 h	-	-	Me	
8249.58	A I	-	[4]	-	Me	8218.58	Dy	2	-	Ks	8190.66	Cb	2	-	-	Me	
8248.95	Ta	50	-	-	-	8218.40	Kr I	-	[80]	Me	8190.13	Se I	-	[4]	-	Rd	
8248.81	Hf	3	-	-	Me	8218.08	Gd	4	-	Ks	8190.054	Kr I	-	[3000]	-	IMe	
8248.74	Nd	2	-	-	-	8218.07	Cr	3	-	Ks	8189.40	Cb	2 h	-	-	Me	
8248.70	Ne I	-	[30]	-	Me	8217.85	A II	-	[3]	Bn	8189.32	Co I	10 h	-	-	-	
8248.70	Ra	-	[6]	-	Re	8216.98	Dy	2 W	-	Ks	8188.77	Cr	3 h	-	-	Ks	
8248.68	Lu	2	-	-	Me	8216.97	Nd	2	-	-	8188.77	Zr I	2	-	-	-	
8248.2	Sm	5	-	-	Kn	8216.46	N I	-	[35]	Ks	8188.20	U	2	-	-	-	
8248.151	Fe I	10	-	-	Me	8216.36	Ru	7	-	-	8188.16	N I	-	[15]	-	Ks	
8247.45	Fe	2	-	-	Bu	8216.32	Hf	3	-	Me	8188.1	Eu	3	-	-	Kn	
8247.44	La I	40	-	-	-	8216.32	Cr I	5	-	-	8187.38	V I	50	-	-	-	
8247.2	Eu	2	-	-	Kn	8216.05	Be I	5	-	Ps	8186.92	Th	6	-	-	Fd	
8246.93	Re	2	-	-	Me	8214.85	Xe II	-	[20]	Hu	8186.9	Xe	-	[10 h]	-	Hu	
8246.87	Br I	-	[5]	-	Ks	8214.74	Sm	5	-	Kn	8186.81	Fe I	4	-	-	-	
8246.51	Sm II	10 d	-	-	Kn	8214.72	F I	-	[20]	En	8186.71	V I	80	-	-	-	

8186.3—8080.3 A.

Wave-length	Element	Intensity Arc Spk., [Dis]	R	Wave-length	Element	Intensity Arc Spk., [Dis]	R	Wave-length	Element	Intensity Arc Spk., [Dis]	R
8186.31	Sm	40 d	-	8152.71	Br	-	[2]	8118.17	Cb	7	-
8185.67	Cr I	5	-	8152.58	Zr I	4	-	8117.5	Ir	2 Wh	-
8185.65	Nd	2 h	-	8152.11	Co I	60	-	8117.16	Sm II	150 d	-
8185.05	N I	-	[15]	8152.02	Se I	-	[15]	8116.80	V I	150	-
8185.00	So I	-	[10]	8151.86	A I	-	[3]	8116.41	Co I	80	-
8184.7	Eu	2	-	8151.80	Xe	-	[60]	8116.20	Sm	12	-
8184.43	Sm	50 d	-	8150.76	S I	-	[2]	8115.94	Xe	-	[30 h]
8183.5	F	-	[5]	8150.2	Eu	3	-	8115.311	A I	-	[5000]
8183.270	Na I	500 R	-	8150.19	Co	50	-	8114.28	Zr I	2	-
8183	Bi II	-	[18]	8149.58	Fe	4	-	8114.10	Sn I	200	-
8182.93	Se I	-	[15]	8149.28	Se I	-	[18]	8114.04	Co I	10 h	-
8182.39	Nd	8	-	8148.78	Mn	2	-	8112.902	Kr I	-	[5000]
8181.97	Ru	2	-	8148.40	S I	-	[2]	8112.47	Ru I	20	-
8180.38	Ti I	25 wh	-	8147.82	S I	-	[30]	8112.31	Sm	4	-
8180.34	Sm	6 d	-	8147.75	Ba I	20 h	-	8112.13	Co I	5 Wh	-
8180.21	V I	20	-	8147.25	Dy	2	-	8110.51	Mn	3	-
8179.78	Nd	6	-	8146.60	Sm	40	-	8109.88	V I	10	-
8179.58	Rn I	-	[5]	8146.10	Gd	8	-	8109.22	Zr I	2	-
8179.34	F I	-	[10]	8145.40	Hg I	-	[2]	8109.10	V I	15	-
8179.31	S II	-	[5]	8145.15	Kr II	-	[20 Wh]	8108.70	Nd	2	-
8178.96	A I	-	[20]	8144.96	Kr I	-	[15]	8108.59	V I	20	-
8178.84	A	-	[40]	8144.8	Xe II	-	[5 wh]	8108.40	Dy	2	-
8178.16	Lu	40	-	8144.59	V I	30	-	8107.91	Xe I	-	[6]
8177.6	Hg II	-	[6]	8143.50	A I	-	[10]	8104.67	Mo	3	-
8177.31	Ra I	-	[10]	8143.29	Nd	7	-	8104.364	Kr I	-	[5000]
8176.23	Cb	2	-	8143.15	Th	4	-	8104.02	Kr I	-	[500]
8175.85	U	2	-	8143.12	W	8	-	8103.692	A I	-	[2000]
8174.30	U	4	-	8142.13	Xe	-	[5 wh]	8102.9	F	-	[4]
8173.89	Hf	5	-	8141.74	Nd	7	-	8102.44	V I	20	-
8173.84	Rn I	-	[6]	8140.43	Co I	40	-	8102.38	Sm	20	-
8173.03	Cb	6	-	8139.57	W	5 h	-	8101.98	Xe I	-	[100]
8172.96	Sm	6 d	-	8139.08	Co I	80	-	8100.3	Sn I	40 hl	-
8172.90	Hg I	-	[5]	8136.83	Xe II	-	[25 h]	8100.11	Ta	15	-
8172.54	Nd	4	-	8136.79	V I	20	-	8099.51	Rn I	-	[100]
8171.95	A I	-	[10]	8136.406	Ne I	-	[300]	8099.11	Nd	4	-
8171.35	V I	50	-	8136.26	S I	-	[30]	8098.55	Xe	-	[12 h]
8171.02	Xe I	-	[100]	8136.20	Rh I	50	-	8098.51	Se	-	[2]
8169.81	Nd	2	-	8135.78	Ru	4	-	8098.23	Cr I	3 h	-
8169.8	Ca I	5	-	8135.27	Sm	5	-	8097.62	U	2	-
8169.75	Cr I	5	-	8135.20	Cb	80	-	8097.24	Xe I	-	[3]
8169.72	Zr I	2	-	8134.9	Yt I	2 h	-	8096.875	Fe	4	-
8169.51	I I	-	[7]	8133.7	Eu	5	-	8095.55	Cu II	-	40
8168.69	V I	15	-	8133.67	Sm	10 d	-	8095.13	Xe	-	10 h
8168.78	Ru	3	-	8133.02	S II	-	[4]	8094.69	Se I	-	[15]
8168.13	Eu	10	-	8132.99	Zr I	80	-	8094.27	Hg	-	[3]
8167.97	Cr	3	-	8132.98	Kr I	-	[60]	8094.06	A I	-	[20]
8167.88	Co I	20 Wh	-	8132.82	Pd I	8	-	8093.96	Co I	80 h	-
8167.55	Xe	-	[10 h]	8132.33	W	5	-	8093.45	V I	80	-
8167.22	Hg I	-	[5]	8132.01	Sm	10	-	8093.32	Si	25 h	-
8167.2	bi Ca	5	-	8131.51	Br I	-	[12]	8093.19	Se I	-	[15]
8166.77	Cr I	5	-	8131.41	Ti I	20	-	8093.08	Ne I	-	[2]
8166.63	Ra	8 w	-	8131.40	Xe	-	[20]	8092.634	Cu I	400 W	-
8166.21	A	-	[2]	8131.29	S I	-	[50]	8091.15	Sm	80	-
8165.70	W	8	-	8130.03	Kr II	-	[3 h]	8091.10	W	3	-
8165.5	Yt	2	-	8129.27	F I	-	[10]	8090.80	Sm	60	-
8165.38	Sm	25 d	-	8129.11	Sm	15	-	8090.48	Hg I	-	[2]
8165.37	Xe	-	[2]	8128.93	Ne I	-	[60]	8089.76	Ti I	6	-
8164.92	Nd	3	-	8128.76	Ta	20	-	8088.85	Ta	2	-
8164.52	Hg I	-	[10]	8128.29	Cr I	5 h	-	8088.58	Cu II	-	20
8163.18	Cr I	35	-	8127.30	A	-	[2]	8088.25	Re	15	-
8163.08	Se I	-	[18]	8126.56	F I	-	[6]	8087.81	Zr I	2	-
8161.90	Sm II	200 d	-	8126.52	Li I	1000	-	8087.77	Se	-	[2]
8161.64	Ba	15 w	-	8125.44	S I	-	[20]	8087.66	Cl I	-	[4]
8161.07	V I	150 w	-	8125.12	Sm II	125 d	-	8087.08	Sm II	15 d	-
8160.65	Co I	40	-	8123.98	I II	-	[6]	8086.71	Cl	-	[15]
8160.15	Al II	-	[10]	8123.79	W	20	-	8086.14	A II	-	[2]
8159.75	Th	4	-	8123.29	Xe I	-	[2]	8086.05	La I	6 ws	-
8159.52	F I	-	[15]	8123.01	S I	-	[30]	8085.57	Cl I	-	[12]
8159.05	La II	5 w	-	8122.29	Sm	6	-	8085.54	Co I	5 h	-
8158.976	In II	-	[2]	8122.05	Nd	6	-	8085.25	Ti I	18	-
8158.54	Ta	10	-	8121.35	Sm	15	-	8085.200	Fe I	20	1 h
8158.12	Ba I	3 h	-	8121.0	Sn	30 hl	-	8085.00	Cr I	12 h	-
8157.73	Se I	-	[20]	8120.89	Nd	3	-	8084.52	Sm	15 d	-
8157.69	Ru	3	-	8120.49	Ba I	20 h	-	8084.51	Cl I	-	[8]
8157.25	Kr II	-	[3 hs]	8120.37	Ce	5	-	8084.50	La I	2	-
8155.69	Se	-	[3]	8120.17	Zr I	2	-	8084.50	Ti I	6	-
8155.5	Eu	4	-	8120.16	Xe	-	[25]	8082.93	A I	-	[5]
8155.03	Cr I	6	-	8119.72	Al II	-	[3]	8082.5	Te I	-	[10 ws]
8154.59	V I	20	-	8119.36	Mn	2	-	8082.458	Ne I	-	[200]
8154.31	Co I	10 h	-	8119.18	A II	-	[50]	8082.36	Lu	2	-
8153.94	Br I	-	[12]	8119.13	Cr I	4 h	-	8081.14	Se I	-	[12]
8153.85	Sm	6	-	8118.70	Nd	2	-	8080.668	Fe I	4	-
8153.55	Hg I	-	[4]	8118.67	Cb	5 h	-	8080.5	Eu	3	-
8153.45	Mo	3	-	8118.56	Se II	-	[2]	8080.32	Hf	4	-
8153.0	bi Ca	40	-	8118.549	Ne I	-	[100]	8080.31	Xe	-	[30 hs]

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities				
		Arc	Spk., [Dis]	R		Arc	Spk., [Dis]	R		Arc	Spk., [Dis]	R		
8080.23	Co I	60	-	-	8045.40	Rh I	125	-	Me	8017.55	A II	-	[60]	Bn
8079.68	A I	-	[20]	Me	8045.38	Cr	3	-	-	8017.54	Cl I	-	[2]	Ks
8079.021	Cs I	1000	-	IMs	8043.92	Rh I	8	-	Me	8017.23	Ch	5 h	-	Me
8078.923	Cs I	100	-	IMs	8043.74	I I	-	[10]	Ev	8017.18	W	25	-	-
8077.58	Gd	4	-	Ks	8043.37	Mn I	4	-	Me	8016.6	F	-	[10 h]	Di
8077.53	F	-	[10]	En	8043.33	Co I	80 h	-	-	8016.59	Rh I	6	-	Me
8076.26	Sm	15	-	Kn	8043.22	Nd	7	-	-	8016.56	Co I	15 h	-	-
8075.52	F I	-	[15]	En	8042.95	As I	10	-	Me	8016.17	Sm	80	-	Kn
8075.46	Cu II	-	2	Sh	8042.18	Xe I	-	[15]	Me	8015.710	Cs I	200	-	IMs
8075.37	Al I	-	[12]	Ps	8041.79	Ne I	-	[2]	Me	8015.58	Cl I	-	[8]	Ks
8075.13	Fe I	5	-	Me	8041.37	Co I	20	-	-	8015.47	Eu	20	-	Kn
8074.03	U	2	-	-	8041.29	Os	2	-	-	8015.30	Rn I	-	[5]	Rs
8071.74	Sm II	40 d	-	Kn	8040.94	F I	-	[30]	En	8015.26	Zr I	2	-	-
8071.50	Nd	3	-	-	8040.56	Xe I	-	[10]	Me	8014.92	Sm II	200 d	-	Kn
8070.97	Xe	-	[30]	Hu	8040.50	Kr I	-	[8 h]	Me	8014.90	Cr I	2 h	-	-
8070.59	Hg I	-	[4]	Su	8040.27	Sm	12 d	-	Kn	8014.786	A I	-	[800]	IMe
8070.37	Sm II	50 d	-	Kn	8040.10	Zr I	2	-	-	8014.78	Tm	40	-	Me
8070.08	Zr I	100	-	-	8040.01	Dy	2	-	Ks	8014.72	Br I	-	[2]	Ks
8068.98	Ta	25	-	-	8039.3	Sn	40 hl	-	Me	8014.26	Xe	-	[30 hs]	Hu
8068.46	Sm II	800	-	Kn	8039.08	Ta	25	-	-	8013.31	Hg I	-	[2]	Su
8068.24	Ti I	50	-	-	8038.38	Sm	4	-	Kn	8012.99	Co I	20 Wh	-	-
8067.93	U	2	-	Me	8038.26	Xe	-	[50 h]	Hu	8012.96	Ni I	2	-	It
8067.	bh C	-	-	-	8037.64	Co I	10 h	-	-	8012.8	Pt	-	5	Me
8066.99	Cd II	-	15	Vs	8037.23	A I	-	[20]	Me	8010.58	Hd	2	-	Me
8066.60	A I	-	[20]	Me	8036.65	Ru	7	-	-	8010.40	Gf	4	-	Ks
8066.49	Co I	60	-	-	8036.35	Se I	-	[20]	Rd	8009.98	Br I	-	[4]	Ks
8066.20	Yt II	3	-	Me	8036.11	Rh I	100	-	Me	8008.68	Dy	2	-	Ks
8065.99	Al I	-	[10]	Ps	8035.99	U	2	-	Me	8008.45	Xe	-	[150 h]	Hu
8065.47	U	2 wh	-	-	8035.40	Xe	-	[20 h]	Hu	8007.77	F I	-	[3]	En
8065.31	Se I	-	[12]	Rd	8035.39	Si	7 w	-	Ks	8007.68	Nd	7	-	-
8065.16	Sm	150	-	Kn	8034.98	Cr	5 h	-	SI	8007.27	Co I	80 h	-	-
8064.94	Xe I	-	[2]	Me	8034.69	U	2	-	Me	8006.40	Sc	2	-	Me
8064.18	Re	2	-	Me	8034.56	Ni I	2 h	-	-	8006.21	Cu I	2	-	Ks
8064.09	Ti	12	-	Me	8033.69	Sm	5	-	Kn	8006.156	A I	-	[600]	IMe
8063.94	Nd	3	-	-	8033.52	Kr I	-	[2 h]	Me	8005.41	Nd	10	-	-
8063.50	Rh I	10	-	Me	8032.54	Mn	2	-	Me	8005.27	Zr I	4	-	-
8063.09	Zr I	20	-	-	8032.48	Th	2	-	Fd	8005.26	Ca	3	-	Me
8062.98	Co I	5 Wh	-	Me	8032.41	Co I	5 h	-	Me	8005.13	Ra	-	[6]	Rs
8062.1	Sb	10 Wh	-	Wt	8032.03	Sm II	200 d	-	Kn	8005.00	Sm II	15 d	-	Kn
8061.4	Te I	-	[30 ws]	Rd	8031.64	Xe	-	[50 h]	Hu	8004.63	Re	3	-	Me
8061.37	Cr I	12 h	-	-	8030.5	Sn	100 hl	-	Me	8003.97	Pd	-	2	-
8061.339	Xe I	-	[150]	IMe	8029.91	Rh I	150	-	Me	8003.70	I I	-	[5]	Ev
8060.91	Se I	-	[12]	Rd	8029.67	Xe I	-	[100]	Me	8003.27	Sc I	2	-	Me
8060.36	W	8	-	-	8029.56	Sm II	6 d	-	Kn	8003.26	Xe I	-	[10]	Me
8060.34	U	2	-	-	8029.26	Co I	80	-	-	8003.18	Al I	-	[5]	Ps
8060.03	Re	30	-	Me	8029.04	Ta	8	-	Ks	8002.64	Co	3	-	-
8059.504	Kr I	-	[1000]	IMe	8028.341	Fe I	100	-	Me	8001.95	Xe	-	[10 hs]	Hu
8059.5	La II	3 h	3 h	Me	8028.24	V I	20	-	-	8001.89	La I	4	-	1
8059.10	Hf	3	-	Me	8027.53	Re	3	-	Me	8001.61	Sm II	200 d	-	Kn
8058.37	Se I	-	[4]	Rd	8027.39	V I	80 w	-	-	8001.0	Pd	-	2	It
8058.22	Mo	2	-	-	8027.32	Mo	6	-	-	8000.96	Se I	-	[30]	Rd
8058.08	Zr I	8	-	-	8027.21	Dy	2	-	Ks	8000.74	Nd	6	-	-
8057.258	Xe I	-	[200]	IMe	8026.50	Ta	50	-	-	7999.72	Hu	3	-	-
8056.52	Hf	4	-	Me	8026.45	Cu II	-	10	Sh	7999.33	Yt I	2 h	-	Me
8056.06	Co I	80 h	-	-	8026.35	Br I	-	[6]	Ks	7998.972	Fe I	35	-	Me
8055.98	Re	4	-	Me	8026.32	Sm II	500 d	-	Kn	7998.75	Ta	5	-	-
8055.76	Zr I	4 h	-	-	8025.60	Yt I	3	-	Me	7998.56	U	2	-	-
8055.72	As I	5	-	Me	8025.59	Ce	7	-	-	7998.5	Eu	2	-	Kn
8055.60	W	20	-	-	8025.33	Dy	2	-	Ks	7998.09	Co	12 h	-	-
8055.60	U	2	-	-	8025.12	Sm II	400	-	Kn	7997.84	Cl I	-	[12]	Ks
8055.50	Sm	8 d	-	Kn	8024.84	Ti I	50	-	-	7996.80	Co I	10 h	-	-
8055.29	Zr I	4	-	-	8024.73	Co I	40	-	-	7996.72	Cu II	-	10	Sh
8054.86	W	8	-	-	8024.2	Pr	3	-	It	7996.53	Ti I	40	-	-
8053.93	Ta	5	-	-	8024.11	Ne I	-	[2]	Me	7996.5	Xe II	-	[3 hw]	Hu
8053.50	Co I	2 h	-	Me	8023.93	Br	-	[2]	Ks	7996.0	bh Ti	2	-	L
8053.41	Yb	10	-	Me	8023.85	Xe	-	[30 h]	Hu	7995.53	U	2	-	-
8053.35	Cs	100 s	-	Ms	8023.31	Cl	-	[4]	Ks	7995.086	O I	-	[50]	Fh
8053.307	A I	-	[100]	Me	8022.28	Hg I	-	[7]	Su	7994.73	Hf	20	-	Me
8053.06	Zr I	2	-	-	8022.131	Co I	40	-	-	7994.473	Fe	6	-	Me
8052.11	Re	10 ws	-	Me	8022.09	Ta	5	-	-	7993.75	Gd	4	-	Ks
8051.81	Se I	-	[10]	Rd	8021.9	A I	-	[2]	Me	7993.22	Kr II	-	[50 h]	Me
8051.39	La I	4	-	-	8021.54	Sm	40	-	Kn	7993.12	Kr I	-	[5]	Me
8051.29	Nd	3	-	-	8020.07	Xe II	-	[5]	Hu	7992.55	Mo	2	-	-
8051.03	Cl	-	[4]	Ks	8020.06	Nd	2	-	-	7992.34	Xe	-	[50 wh]	Hu
8050.76	Co I	5 Wh	-	-	8019.76	Gd	4	-	Ks	7991.5	Xe II	-	[5 wh]	Hu
8050.3	Eu	6	-	Kn	8019.70	Ra II	-	[200]	Rs	7991.30	U	2	-	-
8050.	Bi II	-	[30]	Cf	8019.56	Sm II	30	-	Kn	7990.78	Kr	-	[2]	Me
8049.48	Ru	4	-	-	8019.27	U	2	-	Me	7990.68	Cs	100 s	-	Ms
8049.00	Rn I	-	[20]	Rs	8019.25	Ra	-	[3]	Rs	7990.53	Cr	15	-	-
8048.70	Sm II	400	-	Kn	8018.25	Ba I	10 h	-	-	7989.94	Br I	-	[12]	Ks
8048.56	Gd	4	-	Ks	8018.03	Cr I	2 h	-	-	7989.38	Cr I	15	-	-
8047.28	Xe	-	[15 h]	Hu	8017.90	Tm	200	-	Me	7989.18	U	2	-	-
8046.13	A I	-	[50]	IMe	8017.86	Co I	15 h	-	-	7988.2	Pr	3	-	It
8046.073	Fe I	25	-	Me	8017.83	Sc	3	-	Me	7988.17	Cu II	-	60	Sh
8046.05	Zr I	6	-	-	8017.63	Ru	5	-	-	7988.1	bh Ti	4	-	L

Wave-length	Element	Intensities Arc Spk., [Dis]	R	Wave-length	Element	Intensities Arc Spk., [Dis]	R	Wave-length	Element	Intensities Arc Spk., [Dis]	R
7988.	Sb II	-	12	7988.92	Nd	7	-	7931.63	S I	-	[200] Fh
7987.99	Xe II	-	[40]	7987.76	Co I	40 h	-	7931.41	Kr II	-	[10] Me
7987.38	Co I	80	-	7987.67	Kr I	-	[2] Me	7931.15	Sm	50	-
7987.036	O I	-	[15]	7987.45	Nd	2	-	7930.94	F I	-	[5] En
7986.60	Mo	15	-	7987.33	Ba I	2 h	-	7930.85	Tm	100	-
7985.28	Re	4	-	7987.31	Os	2	-	7930.23	Gd	6	-
7984.07	Sm	6	-	7987.06	W	5	-	7930.23	Si	-	[150] Ks
7983.66	Hf II	3	5	7986.99	A I	-	[10] Me	7929.64	Hg I	-	[4] Su
7982.80	Dy	5	-	7986.66	Zr I	8	-	7929.48	Se	-	[3] Rd
7982.406	Kr I	-	[100] IMe	7986.31	F I	-	[10] En	7928.84	S I	-	[50] Ms
7982.40	Ba I	20 h	-	7985.81	Fe	2	-	7928.600	Kr I	-	[150] IMe
7982.090	Nd	4	-	7985.54	Ta	4 w	-	7928.45	Mn I	2	-
7981.99	Rh I	4	-	7985.52	Sm	6	-	7928.14	Sm II	800	-
7981.82	Kr I	-	[30] Me	7985.38	Nd	2	-	7927.83	La II	1	2
7981.20	Os	2	-	7984.76	Cb	10	-	7927.58	Lu	2	-
7981.19	Kr I	-	[20] Me	7984.31	S	-	[4] Ms	7927.53	Ce	5	-
7981.1	Xe	-	[50 hw] Hu	7984.22	Xe I	-	[4] Me	7927.53	Tm	50	-
7980.75	Re I	300 wl	-	7984.08	F I	-	[3] En	7927.41	Nd	3	-
7980.61	Cl I	-	[2] Ks	7983.11	Ni I	2 h	-	7927.13	Ne I	-	[40] Me
7980.57	Co I	3 h	-	7982.22	Sm	12	-	7926.94	Sm II	20 d	-
7979.18	Sm	3	-	7982.182	O I	-	[50] Fh	7926.55	Co I	80 h	-
7979.04	Re I	20	-	7982.07	Ta	3	-	7926.37	Ti I	20	-
7978.97	Th	4	-	7980.824	O I	-	[100] Fh	7926.27	Sm	30	-
7978.88	Ti I	100	-	7980.19	Ta	50	-	7925.88	Br I	-	[4] Ks
7978.70	Hg I	-	[70] Su	7980.19	Br I	-	[5] Ks	7925.537	Rb I	70	-
7978.57	U	2	-	7949.66	Nd	3	-	7925.260	Rb I	100	-
7978.50	Br I	-	[10] Ks	7949.17	Ti I	50	-	7925.01	Nd	3	-
7978.15	Gd	4	-	7949.03	Mo	2	-	7924.67	Cl I	-	[15] Ks
7877.32	Pt	3	-	7948.6	bh Ti	8	-	7924.65	Sb	300	-
7976.97	Cl I	-	[6] Ks	7948.52	F I	-	[10] En	7924.43	Ru I	25	-
7976.88	U	2	-	7948.30	La I	5	-	7924.20	Zr I	2	-
7976.4	Xe II	-	[3 hw] Hu	7948.175	A I	-	[400] IMe	7924.09	Cr I	2	-
7976.03	Xe I	-	[8] Me	7948.15	Ru I	15	-	7923.95	S I	-	[300] Ms
7975.9	Bi	30 Wh	-	7948.12	Sm II	100 d	-	7923.15	Mo	15	-
7975.44	Ce	10	-	7948.10	Mn	2	-	7923.05	Nd	2	-
7975.09	U	4 Wh	-	7947.95	Br I	-	[4] Ks	7922.95	Ru	4	-
7974.76	Xe	-	[20 h] Hu	7947.92	La I	-	[10] Ks	7922.40	Yb	7	-
7974.74	Cl	-	[4] Ks	7947.60	Rb I	5000 R	-	7922.10	U	2	-
7974.72	Os	2	-	7947.566	O I	-	[1000] Fh	7921.78	Er	5	-
7973.62	Kr II	-	[30 hs] Me	7947.38	V I	8	-	7921.34	Sm	15	-
7973.14	Dy	2	-	7947.204	O I	-	[30] Fh	7920.71	Hf	8	-
7972.9	Te I	-	[20] Rd	7947.00	Sm II	15 d	-	7920.48	Xe	-	[10 hw] Me
7972.76	Hg	-	[3] Su	7946.99	Kr I	-	[20] Me	7920.47	Kr I	-	[40] Me
7972.34	Co	4	-	7946.15	Sm	10	-	7919.48	Co	15 h	-
7972.26	Rn I	-	[2] Rs	7945.878	Fe I	30	2	7919.44	Sm I	80	-
7972.01	Cu II	-	8	7944.66	Hg II	-	[8] Ps	7918.80	U	2	-
7971.29	Cr I	3	-	7944.61	Zr I	20	-	7918.38	Si	200	-
7971.26	Re	20	-	7944.42	Cu II	1	25	7917.84	Cr I	15	-
7971.02	Sn	9 h	-	7944.16	Ne I	-	[20] Me	7917.62	Mo	4	-
7970.91	Si	3 w	-	7944.11	Cs	800	-	7917.52	Lu	15	-
7970.87	Re	15	-	7943.94	Si	500 w	-	7917.48	Ni I	30	-
7970.64	Nd	2	-	7943.93	Ti I	15	-	7916.98	Nd	4	-
7970.46	U	8	-	7943.180	Ne I	-	[200] IMe	7916.45	A I	-	[20] Me
7970.26	Si	10 h	-	7943.178	O I	-	[30] Fh	7915.80	Pd I	10	-
7969.6	Sb	50 h	-	7942.93	Mn	15	-	7915.25	Zr I	4 h	-
7969.53	I I	-	[8] Mu	7942.54	Xe	-	[50] Hu	7915.10	Cl I	-	[6] Ks
7968.85	Mo	8	-	7942.04	Cr I	20	-	7914.96	Sm II	200 d	-
7968.63	Dy	2	-	7941.09	Fe I	5	-	7913.49	Sm	60	-
7968.32	Sm	50	-	7940.93	W	10	-	7913.47	Si	10 h	-
7967.84	Ru I	15	-	7940.47	Zr I	4 h	-	7913.424	Kr I	-	[200] IMe
7967.43	S	-	[200] Ms	7940.31	Sm	150	-	7912.94	Re I	400 wl	-
7967.342	Xe I	-	[500] IMe	7939.63	Lu	2	-	7912.866	Fe I	5	-
7967.09	U	2	-	7939.42	Ba I	3 h	-	7912.55	Si	3 w	-
7966.95	Br I	-	[2] Ks	7938.89	Cb	30	-	7911.62	Lu	30	-
7966.08	Co I	40	-	7938.64	Br I	-	[12 I] Ks	7911.30	Ba I	200	-
7965.70	Nd	6	-	7938.57	Re	8	-	7911.26	Pt	2	-
7965.31	Lu	10	-	7938.5	bh Ti	5	-	7910.53	Cr II	12	-
7965.08	A I	-	[3] Me	7938.34	Kr I	-	[2] Me	7910.46	Sn	10 h	-
7965.	Bi II	-	[50] Cf	7938.06	Hf	2	-	7910.23	A I	-	[4] Me
7964.83	La I	3	1	7937.92	V I	15	-	7910.08	Gd	6	-
7963.97	U	2	-	7937.73	Er	3	-	7909.36	Dy	5	-
7963.89	Se I	-	[3] Rd	7937.41	Xe I	-	40	7909.19	W	3	-
7963.63	Zr I	-	-	7937.166	Fe I	40	1	7908.71	Co I	80 h	-
7963.22	Gd	4	-	7937.09	Sm II	100 d	-	7908.69	Eu	3	-
7962.40	Co I	3 Wh	-	7937.010	Ne I	-	[70] IMs	7908.46	Zr I	2	-
7961.58	Ti I	40	-	7936.32	F I	-	[12] En	7908.27	Cr I	15	-
7961.26	Ba I	15 h	-	7935.01	Cl I	-	[4] Ks	7908.11	Gd	6	-
7961.08	Pd I	5	-	7934.01	Sm	10 d	-	7908.	Bi II	-	[10] Ks
7960.84	A I	-	[2] Me	7933.88	Cl I	-	[8] Ks	7908.0	bh Cr	-	-
7960.72	Ni	2 h	-	7933.38	Sb	5	-	7908.00	U	2	-
7960.55	Co I	25 h	-	7933.130	Cu I	150	-	7907.48	Sm I	5	-
7960.26	As I	25	-	7933.04	V I	6	-	7907.3	bh Ti	6	-
7959.98	Zr I	8	-	7932.20	Si I	300 w	-	7906.67	Sb	10	-
7959.96	U	2	-	7931.92	Sm I	200	-	7906.55	Zr I	2	-
7959.23	Fe I	2	-	7931.76	Zr I	2	-	7906.37	Sm II	30 d	-

Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R
7906.14	Ru I	3	-	-	-	7872.01	Nd	2	-	-	-	7844.25	Nd	2	-	-	-
7906.03	Nd	2	-	-	Ks	7871.94	Ru	3	-	-	-	7844.14	Re I	10	-	-	Me
7905.72	Ba I	300	-	-	-	7871.93	Kr I	5	-	[2]	-	7843.64	Co I	12	-	-	-
7905.25	W	3	-	-	-	7871.65	Pr	5	-	-	-	7843.60	Br I	-	-	[2]	Ks
7904.62	Kr I	-	-	[30]	-	7871.39	Co I	80	-	-	-	7842.97	Zr I	2	-	-	-
7904.4	Pd	-	2	-	It	7871.3	Rn I	-	-	[5]	-	7842.8	bh Cr	-	-	-	L
7904.29	U	2	-	-	-	7870.04	Yt I	2	-	-	-	7842.76	Ta	50	-	-	-
7904.05	Ti I	8	-	-	-	7869.99	Zr I	8	-	-	-	7842.61	Ce	3	-	-	-
7904.00	Sn II	-	-	[8]	-	7869.90	Co I	80	-	-	-	7841.90	Ru	10	-	-	-
7902.57	Cu II	-	25	-	Sh	7869.73	Gd	6	-	-	-	7841.80	La	10	2	-	-
7902.33	Gd	6	-	-	Ks	7869.65	Fe I	3	-	-	-	7841.23	Xe I	-	-	[15]	Me
7902.09	S I	-	-	[4]	-	7869.60	Re I	100 wl	-	-	-	7841.180	In II	-	-	[4]	Ps
7901.86	Eu	5	-	-	Kn	7869.40	Mo	2	-	-	-	7840.913	In II	-	-	[3]	Ps
7901.57	Os	2	-	-	-	7868.75	U	4	-	-	-	7840.695	In II	-	-	[2]	Ps
7900.9	bh Ti	4	-	-	L	7868.58	Cb	4 h	-	-	-	7840.61	Bi I	8 h	-	-	Me
7900.43	U	2	-	-	-	7868.37	Zr I	4 h	-	-	-	7840.40	Kr I	-	-	[4]	Me
7900.39	Nd	2	-	-	-	7868.28	Sm II	20 d	-	-	-	7840.05	Bi	7 h	-	-	Me
7900.17	Ru	3	-	-	Me	7868.20	A I	-	-	[40]	-	7840.05	Co I	40	-	-	-
7899.36	Cl I	-	-	[10]	-	7867.72	Gd	4	-	-	-	7840.01	Kr I	-	-	[8 h]	Me
7898.59	F I	-	-	[15]	-	7867.15	Sb	20	-	-	-	7839.51	Ba I	15	-	-	-
7898.47	Re I	40	-	-	Me	7867.03	W	3	-	-	-	7839.08	Ne I	-	-	[30]	Me
7897.98	Zr I	4	-	-	Ks	7865.00	Dy	2	-	-	-	7838.82	Gd	4	-	-	Ks
7897.7	Xe II	-	-	[5 hs]	-	7864.37	Zr I	2	-	-	-	7838.81	Se II	-	-	[10]	Mz
7896.51	Nd	2	-	-	-	7864.32	Dy	2	-	-	-	7838.70	Bi	400 hl	-	-	Me
7896.43	Ra	-	-	[6]	-	7863.91	Kr I	-	-	[20]	-	7838.17	Co I	80	-	-	-
7896.04	U	2	-	-	-	7863.79	Ni I	20	-	-	-	7838.12	Ra I	-	-	[100]	Rs
7895.96	Sm I	200	-	-	Kn	7863.74	Sn	8 h	-	-	-	7837.71	U	2	-	-	-
7895.83	Cu II	-	20	-	Sh	7863.65	Sm II	100 d	-	-	-	7837.30	Sb	10 h	-	-	Me
7895.12	Yb	20	-	-	Me	7863.46	W	8	-	-	-	7837.27	Sm II	400	-	-	Kn
7891.69	La II	3	2	-	Me	7863.45	As I	4	-	-	-	7837.22	Nd	3	-	-	-
7891.075	A I	-	-	[100]	IMe	7862.84	Nd	4	-	-	-	7836.85	Al	15 l	-	-	Ms
7890.56	Cu II	2	3	-	Sh	7862.7	Xe II	-	-	[3]	-	7836.15	Al I	-	-	[50]	Ps
7890.56	Eu	5	-	-	Kn	7862.68	Cb	2 h	-	-	-	7835.99	Sm	3	-	-	Kn
7890.37	Ru I	20	-	-	-	7861.91	A I	-	-	[15]	-	7835.85	Ce	2	-	-	-
7890.22	Ni I	10	-	-	-	7861.85	Re	5	-	-	-	7835.71	U	2	-	-	-
7889.4	Xe	-	-	[30 h]	-	7861.22	Hf II	3	8	-	Me	7835.55	Dy	2	-	-	Ks
7889.34	Sm	15	-	-	Kn	7861.10	Ni I	10	-	-	-	7835.51	Sm	8	-	-	Kn
7888.93	Re	7	-	-	Me	7861.0	bh Ti	6	-	-	-	7835.33	Al I	-	-	[40]	Ps
7888.52	Zr I	4 h	-	-	Ks	7860.58	Cu II	-	5	-	Sh	7835.08	Sm II	400 d	-	-	Kn
7887.98	Eu	300	-	-	Kn	7860.54	Ce	3	-	-	-	7834.81	Ru	6	-	-	-
7887.74	Mo	8	-	-	-	7860.44	A I	-	-	[2]	-	7834.6	Sb	2 Wh	-	-	Wt
7887.51	Yt I	2	-	-	Me	7859.53	Sm I	100	-	-	-	7834.50	Gd	4 l	-	-	Ks
7887.390	Xe I	-	-	[300]	IHu	7859.39	Co I	10 Wh	-	-	-	7834.34	Mn I	6 h	-	-	Me
7886.59	Nd	2	-	-	-	7859.05	Ce	10	-	-	-	7834.32	Ir I	5	-	-	Me
7886.47	W	8	-	-	-	7856.94	Gd	10	-	-	-	7833.39	Ru I	10	-	-	-
7886.0	Pr	5	-	-	It	7856.8	Yb	3	-	-	-	7833.36	Zr I	2	-	-	Ks
7885.31	Cb	60	-	-	Me	7856.80	Sm	8 d	-	-	-	7833.06	Ne I	-	-	[7]	Me
7885.25	Co I	10 Wh	-	-	-	7856.52	Kr II	-	30 Wh	-	-	7832.98	Xe I	-	-	[10]	Me
7884.95	Cr I	4	-	-	-	7856.10	Sm	8	-	-	-	7832.79	Dy	2	-	-	Ks
7884.38	Gd	4	-	-	Ks	7856.10	Tm	60	-	-	-	7832.224	Fe I	30	1	-	Me
7883.2	Yb	25	-	-	It	7855.85	Co I	40 h	-	-	-	7832.05	U	2	-	-	-
7882.71	Xe II	-	-	[20]	-	7855.73	A I	-	-	[8]	-	7831.40	Sm	60 d	-	-	Kn
7882.37	Ta	150	-	-	-	7855.52	Yt I	7	-	1	-	7830.79	Cl I	-	-	[8]	Ks
7882.36	Kr I	-	-	[10]	-	7855.44	Fe I	3	-	-	-	7830.52	Ru	2	-	-	Me
7882.36	bh Sr	3 l	-	-	L	7855.12	Ni I	8 h	-	-	-	7830.21	Kr I	-	-	[2 h]	Me
7882.35	Eu	10	-	-	Kn	7854.94	Sm	12 d	-	-	-	7830.05	Rh I	80	-	-	Me
7882.18	Zr I	4 h	-	-	-	7854.821	Kr I	-	-	[800]	-	7829.81	Ru I	7	-	-	-
7882.09	Re	25 wl	-	-	Me	7854.45	Mo	15	-	-	-	7829.65	Mo	20	-	-	-
7881.94	U	15	-	-	-	7854.26	Mn	2	-	-	-	7829.396	In II	-	-	[3]	Ps
7881.90	Yt II	25	10	-	Me	7853.81	Ru	3	-	-	-	7828.28	Xe	-	-	[20 h]	Hu
7881.76	Kr I	-	-	[30]	-	7853.18	Nd	2	-	-	-	7828.13	Re	8	-	-	Me
7881.58	Br I	-	-	[2]	-	7852.17	Os	3	-	-	-	7828.0	bh Ti	10	-	-	L
7881.49	Ru	100	-	-	-	7851.20	Ce	2	-	-	-	7826.88	V I	4	-	-	-
7881.320	Xe I	-	-	[100]	IMe	7851.18	V	3	-	-	-	7826.81	Ni I	10	-	-	-
7880.72	Re	8	-	-	Me	7850.5	Si I	2 Wh	-	-	-	7826.72	Zr I	8	-	-	-
7880.34	W	5	-	-	-	7850.2	Eu	2	-	-	-	7825.85	Re	10	-	-	Me
7880.07	Sm II	100 d	-	-	Kn	7849.42	A II	-	-	[15]	-	7825.66	Cu II	-	50	-	Sh
7879.93	La II	2	4	-	Me	7849.35	Zr I	8	-	-	-	7825.20	Nd	2	-	-	-
7879.60	Ce	3 hwl	-	-	-	7848.77	Sm	10 d	-	-	-	7825	Bi II	-	-	[10]	Cf
7879.19	F I	-	-	[10]	-	7848.72	Eu	5	-	-	-	7824.91	Rh	200	-	-	Me
7878.24	Cl I	-	-	[15]	-	7848.55	Sc	2	-	-	-	7823.85	U	2	-	-	-
7877.98	Ba I	20 l	-	-	-	7847.80	Ru I	100	-	-	-	7823.78	W	3	-	-	-
7877.49	Co	20	-	-	-	7847.53	Th	3	-	-	-	7823.72	Al II	-	-	[5]	Ps
7877.30	Yb	15	-	-	Me	7846.50	Rh I	50	-	-	-	7823.34	Sm	8	-	-	Kn
7877.08	Ra	-	-	[3]	-	7846.35	Gd	12	-	-	-	7822.94	Zr I	4	-	-	-
7876.25	Zr I	3	-	-	-	7846.10	Sm	4 d	-	-	-	7822.61	F I	-	-	[5]	En
7875.55	I I	4	-	-	Mu	7845.51	Nd	2	-	-	-	7822.12	Co	2 Wh	-	-	Mo
7875.38	U	-	-	-	-	7845.35	Hf	20	-	-	-	7821.85	U	2	-	-	-
7875.10	Sm II	20 d	-	-	Kn	7845.03	Cu II	-	25	-	Sh	7821.64	Se I	8	-	-	Me
7874.8	Eu	3	-	-	Kn	7844.97	Ce	2	-	-	-	7821.39	Cl I	-	-	[15]	Ks
7874.	bh C	-	-	-	L	7844.84	Gd	6	-	-	-	7821.25	Mn I	12 h	-	-	Mo
7873.72	Sm	25 d	-	-	Kn	7844.82	Sm II	60 d	-	-	-	7821.15	Hg I	-	-	[8]	Su
7873.41	Cb	25	-	-	Me	7844.71	U	2	-	-	-	7820.73	Hg I	-	-	[2]	Mu
7873.32	Co I	10 h	-	-	-	7844.63	Fe I	2	-	-	-	7820.57	Cu II	5	-	-	Sh
7872.09	Re	2	-	-	Me	7844.41	Sh	100	-	-	-	7820.15	Sm II	150 d	-	-	Kn

7820.1—7747.1 Å.

Wave-length	Element	Intensity Arc	Spk., [Dis]	R	Wave-length	Element	Intensity Arc	Spk., [Dis]	R	Wave-length	Element	Intensity Arc	Spk., [Dis]	R
7820.1	bh Ti	8	-	L	7795.76	Mo	3	-	-	7772.4	Sm	2	-	Kn
7819.57	Ta	2	-	-	7794.68	Sc I	6	-	Me	7772.12	Xe	-	[20 hl]	Hu
7819.5	Te	-	[5]	Rd	7794.67	Re	4	-	Me	7772.11	Cb	5 h	-	Dv
7819.35	Zr I	10	-	-	7794.50	Sm I	100	-	Kn	7772	Sb II	-	15	-
7818.82	Nd	2	-	-	7794.13	Co I	5 h	-	-	7771.93	Fe	3	-	-
7818.73	Ta	3 h	-	-	7793.0	Ga II	-	[10]	Sy	7771.928	O I	-	[1000]	Me
7818.31	Xe	-	[15 wh]	Hu	7792.76	Sm	3	-	Kn	7771.88	Ru	100	-	-
7818.25	Co	5 h	-	Me	7792.33	Sm	10	-	-	7771.65	Cr	12	-	-
7818.22	Eu	20	-	Kn	7792.24	Nd	2	-	-	7771.6	Sm	2	-	Kn
7818.21	Pb	5 hl	-	Me	7791.90	Kr II	-	[6 hl]	Me	7771.13	Cl I	-	[2]	Ks
7817.78	Th	3	-	Fd	7791.86	Ru I	100	-	-	7771.06	Sc I	5	-	Me
7817.9	Sb	10 Wh	-	Wt	7791.61	Rh I	100	-	Me	7769.26	Gd	4	-	Ks
7816.61	Mn I	15 h	-	Me	7791.24	U	2	-	Me	7769.18	Cl I	-	[8]	Ks
7816.32	Zr I	2	-	-	7790.90	Hf	5	-	Me	7768.93	U	2	-	Me
7816.32	U	2	-	-	7790.82	Mn I	10 h	-	Me	7768.43	Kr I	-	[5]	Me
7816.16	He I	-	[12]	Ps	7790.61	V	3 h	-	-	7768.04	Sm	20 d	-	Kn
7816.14	Lu	6	-	Me	7790.22	Pt	2	-	Me	7767.91	Nd	2	-	-
7815.91	Lu	25	-	Me	7790.05	Dy	10	-	-	7767.87	Se I	-	[2]	Rd
7815.84	Lu	15	-	Me	7789.96	Os	3	-	-	7766.99	Sm	4	-	-
7815.83	Al II	-	[2]	Ps	7789.88	Re	8	-	Me	7766.86	Ba I	15	-	-
7815.48	Ta	25	-	-	7789.76	Sm	15 d	-	Kn	7766.57	U	2	-	Me
7815.190	In II	-	[4]	Ps	7789.42	Xe I	-	[15]	Me	7766.55	Zr I	2	-	-
7815.00	Sm	-	6 d	Kn	7789.318	In II	-	[5]	Ps	7766.50	Gd	4	-	Ks
7814.850	In II	-	[2]	Ps	7789.045	In II	-	[6]	Ps	7765.70	Zr I	2	-	-
7814.69	Dy	2	-	Ks	7788.95	Ni I	60	-	-	7764.9	Sb	10 Wh	-	Wt
7814.55	Hf	3	-	Me	7788.95	Th	2	-	Fd	7764.72	Mn I	200 h	-	Me
7814.35	Nd	2 h	-	-	7788.95	Ta	3	-	Ks	7764.03	Pd I	25	-	-
7814.33	A I	-	[10]	Me	7788.721	In II	-	-	Ps	7764.02	Co I	12	-	-
7814.03	Ta	50	-	-	7788.64	Ta	3	-	Ks	7763.89	U	2	-	-
7813.61	Sm II	20 d	-	Kn	7788.42	Yt I	2	-	Me	7763.11	Ta	25	-	-
7813.55	U	2	-	-	7787.516	In II	-	[4]	Ps	7763.00	Cr	2 h	-	-
7812.75	Sm	60 d	-	Kn	7787.31	Nd	2	-	-	7761.86	U	4	-	-
7812.73	Cu II	-	10	Sh	7787.22	Gd	4	-	Ks	7761.14	W	3	-	-
7812.16	Yt I	4	1	Me	7787.179	In II	-	[2]	Ps	7760.98	Gd	4	-	Ks
7812.08	Dy	15	-	Ks	7787.11	Cb	2	-	Me	7760.07	Dy	2	-	Ks
7811.31	Mo	3	-	-	7787.04	Xe II	-	[50]	Hu	7759.87	U	2	-	-
7810.30	Co I	10 h	-	-	7787.02	Sm I	8	-	Kn	7759.67	Ru	2	-	Me
7809.82	Rn I	-	[100]	Rs	7786.834	In II	4	-	Ps	7759.434	Rb I	400	-	IRz
7809.45	Pb	10 hl	-	Me	7786.78	Pt I	4	-	Me	7759.41	Eu	4	-	Kn
7809.24	Co I	20	-	-	7786.67	Pd I	10	-	-	7759.1	Te I	-	[15]	Rd
7808.96	Sm II	20 d	-	Kn	7786.66	Kr I	-	[2]	Me	7758.30	Lu	20	-	Me
7808.94	W	5	-	-	7786.439	In II	-	[2]	Ps	7758.23	Ta	2	-	Ks
7808.48	U	2	-	-	7786.157	In II	-	[3]	Ps	7758.20	Sm	5	-	Kn
7808.45	Nd	3	-	-	7786.11	Pr	4	-	-	7758.03	Yb	10	-	Me
7808.22	Sn I	10 h	-	Me	7785.995	In II	-	[2]	Ps	7757.89	Hf II	5	15	Me
7808.21	Sm	5	-	Kn	7785.17	Sc I	8	-	Me	7757.86	Zn II	-	[30]	Ps
7808.03	Fe	4	-	-	7784.13	U	20	-	-	7757.74	Sm II	20 d	-	Kn
7807.66	Cu II	-	70	Sh	7784.12	W	10	-	Kn	7757.651	Rb I	1000	-	IRz
7806.990	In II	-	[3]	Ps	7783.77	Sm	5	-	Me	7757.34	Cy	2	-	Ks
7806.82	Ru	7	-	-	7783.66	Xe I	-	[50]	Me	7757.31	Dy	20	-	Me
7806.819	In II	-	[3]	Ps	7783.4	bh Ti	2	-	L	7757.23	Sm	5	-	Kn
7806.52	Kr I	-	[50]	Mo	7782.51	Sm	4	-	Kn	7756.52	Kr II	-	[30 Wh]	Me
7806.11	Sm	30 d	-	Kn	7782.43	U	2	-	-	7755.97	Gd	8	-	Ks
7806.00	Mn I	4 l	-	Me	7781.97	Kr	-	[100 h]	Me	7755.8	bh Ti	4	-	L
7805.56	Sm	8 d	-	Kn	7781.868	Yt	5	-	Ks	7755.80	Sb	10	-	Me
7805.19	Cu II	-	25	Sh	7780.92	Dy	5	-	Ks	7755.39	Zr I	2	-	Kn
7803.96	Tm	15	-	Me	7780.586	Fe I	25	-	Me	7755.32	Sm I	80	-	Ks
7803.32	Eu	30	-	Kn	7780.51	Pt	2	-	-	7755.20	Sm II	125 d	-	Kn
7803.03	Br I	-	[15 l]	Ks	7780.49	U	-	-	Me	7755.15	Mn I	5 h	-	Me
7802.651	Xe I	-	[100]	Ime	7780.43	Ba I	300	-	-	7754.96	Sn I	100	-	Me
7802.52	Yt I	2	-	Me	7779.9	Mg	5	-	Ps	7754.70	F I	-	[60]	En
7802.40	U	2	-	-	7779.72	Ta	30 w	-	-	7754.4	Te I	-	[6]	Rd
7801.54	Sm I	150	-	Kn	7778.74	Cu II	-	30	Sh	7754.37	Cu II	-	10	Sh
7801.53	Hf II	2	6	Me	7778.15	Sm	4	-	Kn	7754.19	U	2	-	-
7801.30	Si	3 h	-	Ks	7778.1	bh Cr	-	-	-	7752.72	Sc I	3	-	Me
7801.05	Re	4	-	Me	7777.8	Pb II	-	-	Ea	7752.67	Mn I	5 hl	-	Me
7800.74	Zr I	2	-	-	7777.1	Xe	-	[10]	Hu	7752.34	Mo	3	-	-
7800.44	Sc I	40	-	Me	7777.01	Sm	30	-	Kn	7751.73	Ba I	40	-	-
7800.227	Rb I	9000 R	-	Hz	7776.958	In II	-	[10]	Ps	7751.61	Dy	5	-	Ks
7800.22	F I	-	[50]	En	7776.94	U	2 h	-	Me	7751.13	Fe I	5	-	-
7800.0	Si	4 Wh	-	Ks	7776.751	In II	-	[5]	Ps	7750.95	Nd	3	-	-
7799.58	Re	3	-	Me	7776.71	W	3	-	-	7750.41	Se I	-	[5]	Rd
7799.51	Zr I	2	-	Ks	7776.571	In II	-	[2]	Ps	7750.37	Sc I	5	-	Me
7799.51	Ta	3	-	Ks	7776.28	Kr I	-	[40]	Me	7750.14	Dy	2	-	Cf
7799.365	Zn I	10	-	Hz	7775.433	O I	-	[100]	Me	7750	Bi II	-	[20]	-
7798.55	A I	-	[30]	Me	7775.41	Ru	60	-	-	7749.8	bh Ti	4	-	L
7798.47	Sm	10	-	Kn	7775.32	Ba I	25	-	-	7749.74	Pt I	2	-	Me
7798.26	Ba I	4 h	-	Me	7774.18	Xe	-	[4]	Hu	7749.30	Sm II	200	-	Kn
7797.89	Hu	5	-	-	7774.14	Ru	100	-	-	7749.26	Gd	12	-	Ks
7797.75	Ce	3	-	-	7774.138	O I	-	[300]	Me	7749.16	Kr I, II	-	[3]	Me
7797.62	Ni I	80	-	-	7773.53	Ta	3	-	-	7749.10	Nd	3	-	-
7797.42	Er	3	-	Ed	7773.03	Nd	3	-	-	7748.93	Ni I	8	-	-
7797.30	Nd	2	-	-	7772.90	Rh I	100	-	Me	7748.281	Fe I	25	-	Me
7796.42	Nd	2	-	-	7772.83	Sm II	30 d	-	Kn	7748.19	U	2	-	-
7796.32	Yt I	4	-	Me	7772.40	Kr I	-	[5 h]	Me	7747.10	U	2	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R
7746.94	Sm	5	-	-	Kn	7722.02	Ta	25	-	-	-	7690.37	Ta	3	-	-	-
7746.828	Kr I	-	[150]	-	IMe	7721.87	Ba I	10 h	-	-	-	7690.10	A I	-	-	[2]	Me
7746.64	Rn I	-	[20]	-	Rs	7721.81	Pr	4	-	-	-	7690.05	Rh I	20	-	-	Me
7746.20	Eu	600	-	-	Kn	7721.38	Sm	5	-	-	Kn	7689.88	U	2	-	-	-
7746.20	Gd	4	-	-	Ks	7721.1	bh Ca	4	-	-	L	7689.49	Yt I	2	-	-	Me
7745.43	Zr I	2	-	-	Ks	7721.08	Dy	2	-	-	Ks	7689.36	A	-	-	[10]	Rt
7744.98	Cl I	-	[20]	-	Ks	7720.77	Mo	50	-	-	-	7689.18	Ce	3	-	-	-
7744.26	U	2	-	-	-	7720.72	Hf II	1	2	-	Me	7688.94	W	10	-	-	-
7744.09	Cu II	-	5	-	Sh	7720.44	Ru	3	-	-	-	7687.779	Ag I	20	-	-	1Hz
7744.05	Zr	2	-	-	Ks	7719.89	Yt I	6	1	-	Me	7687.21	Hg I	-	-	[2]	Su
7743.88	Nd	2	-	-	-	7719.16	Ta	3 h	-	-	-	7686.81	Lu	2 h	-	-	Me
7743.67	Sm	5	-	-	Kn	7718.76	U	2	-	-	-	7686.70	Sm I	8	-	-	Kn
7743.27	Co I	4	-	-	-	7718.48	Hg	-	[2]	-	Su	7686.13	S I	-	-	[150]	Ms
7743.2	bh Ti	4	-	-	L	7718.15	Nd	2	-	-	-	7686.07	Sm	4	-	-	Kn
7743.2	Si	4 h	-	-	Ks	7717.70	Gd	4	-	-	Ks	7685.30	Sn I	20	-	-	Me
7743.12	Re	15 w	-	-	-	7717.60	Cl I	-	[18]	-	Ks	7685.246	Kr I	-	-	[1000]	1Me
7742.7	Si	5 h	-	-	Ks	7715.71	Sm	5	-	-	Kn	7684.86	Nd	2 h	-	-	-
7742.68	Fe I	3	-	-	-	7715.63	Ni I	40	-	-	-	7684.83	Re	3	-	-	Me
7742.58	Eu	400	-	-	Kn	7715.6	bh Ca	5	-	-	L	7683.865	In II	-	-	[3]	Ps
7741.80	Sn II	-	[30]	-	Mc	7715.38	Br I	-	[4]	-	Ks	7683.6	Tl II	-	-	[2]	El
7741.39	Kr I	-	[40]	-	Me	7715.35	Dy	15	-	-	-	7683.49	A II	-	-	[2]	Bn
7741.17	Sc I	50	-	-	-	7715.03	Ta	2	-	-	Ks	7683.455	In II	-	-	[6]	Ps
7740.940	In II	-	[3]	-	Ps	7714.99	Sm	6	-	-	Kn	7683.45	Re	2	-	-	Me
7740.84	Nd	2	-	-	-	7714.72	Pr	3	-	-	-	7683.401	In II	-	-	[5]	Ps
7740.733	In II	-	[4]	-	Ps	7714.32	Ni I	60	-	-	-	7683.36	Gd	6	-	-	Ks
7740.54	La II	-	2 h	-	Me	7713.4	bh Ti	4	-	-	L	7683.027	In II	-	-	[6]	Ps
7740.481	In II	-	[5]	-	Ps	7712.68	Co I	80	-	-	-	7682.925	In II	-	-	[10]	Ps
7740.31	Xe I	-	[40]	-	Me	7712.58	Re	2	-	-	Me	7682.876	In II	-	-	[8]	Ps
7740.194	In II	-	[6]	-	Ps	7712.42	Xe II	-	[30]	-	Hu	7682.46	Ce	2	-	-	-
7740.17	Hf	10	-	-	Me	7712.42	Mn I	100 h	-	-	Me	7682.262	In II	-	-	[3]	Ps
7739.8	Pb II	-	[5]	-	Ea	7712.04	Sm II	60 d	-	-	Kn	7681.678	In II	-	-	[2]	Ps
7739.38	Dy	2	-	-	Ks	7711.93	Dy	2	-	-	Ks	7680.61	Se I	-	-	[6]	Rd
7738.68	Cu II	-	30	-	Sh	7711.73	Fe II	25	15	-	-	7680.51	Sm	5 d	-	-	Kn
7738.43	Rn I	-	[10]	-	Rs	7710.72	Sm	10	-	-	Kn	7680.35	Si I	100 w	-	-	Ks
7738.18	Sc I	2	-	-	Me	7710.390	Fe I	10	-	-	Me	7680.20	Mn I	200	-	-	-
7738.09	Gd	4	-	-	Ks	7709.98	Mn I	15 Wh	-	-	Me	7680.00	Er	2	-	-	Ed
7737.20	Mn	2	-	-	-	7709.54	Mo	15	-	-	-	7679.60	S I	-	-	[70]	Ms
7736.68	V I	5	-	-	-	7709.14	Sm	8	-	-	Kn	7679.49	Mo	15	-	-	-
7736.26	Sm	150 d	-	-	Kn	7708.42	Zr I	4 h	-	-	-	7679.4	Pb II	-	-	[2]	Ea
7735.69	Kr II	-	[200 h]	-	Me	7707.93	Rh	2	-	-	Me	7679.3	bh Ti	4	-	-	L
7735.5	Sm	2	-	-	Kn	7707.78	Mo	3	-	-	-	7678.79	Sm II	60 d	-	-	Kn
7735.45	Co I	10 h	-	-	-	7707.59	U	2	-	-	Me	7677.83	Se I	-	-	[3]	Rd
7734.43	Mn I	20 h	-	-	Me	7706.52	Mn I	5 hl	-	-	Me	7677.16	Gd	6	-	-	Ks
7734.23	Co I	40	-	-	-	7706.50	Ba I	25	-	-	-	7676.74	Dy	5	-	-	Ks
7733.99	Cr I	5	-	-	-	7706.0	Pr	3	-	-	It	7676.20	Ta	3	-	-	-
7733.77	Ta	2	-	-	-	7705.92	Re I	25	-	-	Me	7676.19	Sm	6 d	-	-	Kn
7733.64	Br I	-	[2]	-	Ks	7705.70	Nd	2	-	-	Ks	7676.14	V I	2	-	-	-
7733.59	Re	25	-	-	-	7705.37	Sm	6	-	-	Kn	7676.06	Gd	6	-	-	Ks
7733.50	Gd	12	-	-	Ks	7705.2	bh Ti	8	-	-	L	7675.35	Sm II	6 d	-	-	Kn
7733.24	Mn I	60 hl	-	-	Me	7704.96	Pr	3	-	-	-	7674.37	Hg I	-	-	[7]	Su
7732.55	Dy	2	-	-	Ks	7704.92	Co I	12	-	-	-	7673.06	Sr I	200 hs	-	-	Me
7732.54	Sm	4 d	-	-	Kn	7704.81	A I	-	[20]	-	Me	7672.60	Gd	10	-	-	Ks
7732.50	Zn II	-	[50]	-	Ps	7704.81	V I	20	-	-	-	7672.49	Sm	50	-	-	Kn
7732.49	Mo	10	-	-	-	7704.27	Zr I	2 h	-	-	-	7672.46	Cl I	-	-	[10]	Rd
7732.36	Ce	3	-	-	-	7703.41	Kr I	-	[2 h]	-	Me	7672.17	Se I	-	-	[4]	-
7732.3	Pb II	-	[12]	-	Ea	7703.33	Cb	6	-	-	Me	7672.1	bh Ti	10	-	-	L
7731.57	Tm	150	-	-	Me	7702.87	Cl I	-	[2]	-	Ks	7672.02	Ba I	400	-	-	-
7730.61	Mo	3	-	-	-	7701.90	Co I	12	-	-	-	7670.93	Ce	7 Wl	-	-	-
7729.91	Ru	3	-	-	-	7701.46	Os	2	-	-	Me	7670.85	Ne I	-	-	[5]	Gr
7729.78	Dy	15	-	-	Ks	7701.37	V I	3	-	-	-	7670.81	Xe I	-	-	[2]	Mo
7729.72	Sc I	10	-	-	-	7701.00	W	3 h	-	-	-	7670.66	Xe II	-	-	[100]	Hu
7728.56	Sm II	200 d	-	-	Kn	7700.20	I I	-	[8]	-	Ev	7670.42	Mn	5 h	-	-	Me
7728.49	Hg I	-	[10]	-	Su	7699.49	Yb	2000	-	-	Me	7670.40	Sm	20 d	-	-	Kn
7727.66	Ni I	80	-	-	-	7699.14	Ta	5	-	-	Ks	7670.33	Se I	-	-	[8]	Rd
7727.09	Sc I	2	-	-	Me	7698.979	K I	5000 R	200	-	1Hz	7670.28	Ta	15 W	-	-	Ks
7726.68	Cb	60	-	-	Me	7698.94	Nd	2 h	-	-	-	7670.04	A I	-	-	[50]	Me
7726.64	Cu II	-	5	-	Sh	7698.00	Yt	4	-	-	Me	7669.69	U	4	-	-	-
7726.02	Pr	2	-	-	-	7697.73	Sc I	20	-	-	-	7668.73	U	4 h	-	-	-
7725.99	Cr I	4	-	-	-	7696.99	U	2	-	-	-	7668.21	Sm	20	-	-	Kn
7725.95	Co I	12	-	-	-	7696.73	S I	-	[200]	-	Ms	7667.89	Mn	20 h	-	-	Me
7725.66	Sm	3	-	-	Kn	7696.53	Nd	3	-	-	-	7667.20	Sm II	50 d	-	-	Kn
7725.04	Ta	4	-	-	-	7696.50	Dy	2	-	-	Ks	7667.03	A I	-	-	[4]	Mo
7724.91	Nd	2	-	-	-	7695.94	Co	10 h	-	-	-	7666.95	Gd	4	-	-	Ks
7724.63	Ne I	-	[10]	-	Me	7695.78	Sm	100	-	-	Kn	7666.92	Hf I	-	-	[4]	Su
7724.206	A I	-	[200]	-	IMe	7694.539	Kr I	-	[1000]	-	1Me	7666.78	Dy	2	-	-	Ks
7724.08	Yt I	5	-	-	Me	7694.50	Gd	8	-	-	Ks	7666.61	Xe I	-	-	[10]	Me
7723.760	A I	-	[200]	-	IMe	7693.85	Dy	2	-	-	Ks	7666.4	bh Ti	6	-	-	L
7723.70	Zr I	2	-	-	Ks	7693.63	Re	20	-	-	Me	7665.72	Sc I	5	-	-	Me
7723.63	Mo	15	-	-	-	7693.59	U	2	-	-	Me	7664.907	K I	9000 R	400	-	1Hz
7723.4	Pt	-	4	-	It	7693.45	Zr I	10 h	-	-	Ks	7664.74	Cd	-	-	3	Vs
7723.20	Fe I	4	-	-	Me	7692.24	Sm	20 d	-	-	Kn	7664.70	Cu II	5	-	70	Sh
7722.89	Cr I	5	-	-	Ks	7691.89	U	2	-	-	Me	7664.56	Xe I	-	-	[30]	Me
7722.87	Ru	25	-	-	-	7691.34	Sm	15	-	-	Kn	7664.34	La I	8	-	-	-
7722.58	Yb	2	-	-	Me	7690.83	Zr I	4 h	-	-	-	7664.302	Fe I	15	-	-	Me
7722.48	Zr I	2	-	-	Ks	7690.75	Sm II	20 d	-	-	Kn	7664.02	Xe I	-	-	[10]	Me

7663.7—7583.9 A.

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities			
		Arc	Spk.	[Dis.]	R			Arc	Spk.	[Dis.]	R			Arc	Spk.	[Dis.]	R
7663.75	Kr	-	-	[2]	Me	7635.29	Dy	2	-	-	Ks	7610.24	Co I	35	-	-	-
7663.52	Nd	2	-	-	-	7635.13	Kr II	-	-	[5]	Me	7609.97	Ni	2 h	-	-	-
7663.47	Ti I	12	-	-	-	7635.105	A I	-	-	[500]	IMe	7609.82	Xe I	-	-	[3]	Me
7663.09	Hf II	2	30	-	Me	7634.73	U	4	-	-	-	7609.60	Zr I	2	-	-	-
7662.98	V I	2 h	-	-	-	7634.50	Co I	3	-	-	-	7609.25	Dy	5	-	-	Ks
7662.94	Sm	20	-	-	Kn	7634.1	bh Ti	4	-	-	L	7609.16	U	4	-	-	-
7662.35	Dy	25	-	-	-	7632.82	Nd	2	-	-	Ks	7609.01	Cs	500 l	-	-	-
7662.3	A I	-	-	[2]	Me	7632.77	U	2	-	-	-	7608.59	Hf	2	-	-	Me
7661.30	Sm	15	-	-	Kn	7632.2	Pb II	-	-	[100]	Ea	7608.46	Xe I	-	-	[5]	Me
7661.223	Fe I	10	-	-	Me	7631.77	Sm II	20 d	-	-	Kn	7607.74	Sm I	80	-	-	Kn
7661.04	V I	2 h	-	-	-	7631.71	U	8	-	-	-	7607.48	Sm	40 d	-	-	Kn
7659.01	Lu	4	-	-	Me	7631.46	Mo	2	-	-	Ks	7607.40	Br I	-	-	[4]	Ks
7658.97	Fe	2	-	-	Me	7631.32	Dy	2	-	-	Ks	7607.17	F I	-	-	[45]	En
7658.70	U	2	-	-	-	7630.44	U	2	-	-	Me	7607.15	Zr I	10	-	-	-
7658.60	Zr I	6	-	-	-	7629.82	S	-	-	[200]	Ms	7606.81	Se I	-	-	[12]	Rd
7657.99	I II	-	-	[25]	Mu	7629.46	Kr II	-	-	[5 h]	Me	7605.91	Nd	2	-	-	-
7657.60	Mg I	2	-	-	Ps	7629.31	U	2	-	-	-	7605.88	U	2	-	-	-
7657.48	Rn I	-	-	[10]	Rs	7629.24	Sm	3	-	-	Kn	7604.97	Xe I	-	-	[2 h]	Me
7657.30	Ni I	2 h	-	-	-	7628.86	A I	-	-	[50]	Me	7604.81	Ta	2 h	-	-	Ks
7656.81	Re	5	-	-	Me	7628.1	bh Ti	8	-	-	L	7603.88	Eu	4	-	-	Kn
7656.76	Mo	25 h	-	-	-	7628.02	U	2	-	-	-	7603.75	Nd	2	-	-	Ks
7655.99	Mn I	3 hl	-	-	Me	7627.85	Al II	-	-	[2]	Ps	7603.43	Mn	2	-	-	Ks
7655.78	Sm II	50 d	-	-	Kn	7627.67	Eu	8	-	-	Kn	7603.40	Cb	5	-	-	Me
7654.44	Ti I	6	-	-	-	7626.38	U	2	-	-	-	7603.312	In II	-	-	[3]	Ps
7654.43	Er	4	-	-	Ed	7625.97	Ta	2	-	-	Ks	7602.95	Os	20	-	-	-
7654.28	Ni	10 h	-	-	Si	7624.81	V I	15	-	-	-	7602.775	In II	-	-	[3]	Ps
7654.06	A II	-	-	[7]	Bn	7624.40	Hf	30	-	-	Me	7602.282	In II	-	-	[2]	Ps
7653.76	Fe I	80	-	-	-	7623.16	Sm	15 d	-	-	Kn	7602.18	Hg I	-	-	[5]	Su
7653.61	U	2	-	-	-	7622.94	Yt I	5	1	-	Me	7601.84	Mo	8	-	-	-
7653.59	Se I	-	-	[8]	Rd	7622.64	Ta	2 h	-	-	Ks	7601.544	Kr I	-	-	[5000]	IMe
7653.26	Mo	3	-	-	Ks	7621.96	Gd	10	-	-	Ks	7601.28	Rn I	-	-	[8]	Rs
7652.89	Yt I	3	-	-	Me	7621.95	U	2	-	-	-	7600.77	Xe I	-	-	[10]	Me
7652.49	Re	2	-	-	Me	7621.86	V I	4 d	-	-	-	7600.27	U	2	-	-	Me
7652.36	Cu II	-	30	-	Sh	7621.72	Mo	2	-	-	Ks	7598.28	V I	2 h	-	-	Me
7652.16	Kr I	-	-	[4]	Me	7621.61	Zr I	2	-	-	-	7598.01	Sm	40	-	-	Kn
7651.62	Mn I	4 hl	-	-	Me	7621.50	Ru I	10	-	-	-	7597.55	Rn I	-	-	[6]	Rs
7650.42	Ta	2	-	-	Ks	7621.50	Sr I	100	-	-	Me	7597.5	bh Zr	4	-	-	L
7650.32	Gd	10	-	-	Ks	7621.33	Ne I	-	-	[5]	Gr	7597.46	U	2 w	-	-	Me
7649.79	Lu	3	-	-	Me	7621.2	Hg II	-	-	[2]	Su	7596.92	V I	3	-	-	Me
7649.62	Ta	5	-	-	Ks	7621.17	Zr I	2	-	-	-	7596.30	Re	2	-	-	Me
7649.54	Lu	8	-	-	Me	7620.84	Ta	2	-	-	Ks	7596.0	bh Ti	3	-	-	L
7649.52	Mo	2	-	-	Ks	7620.538	Fe I	5	-	-	Me	7595.93	Nd	2	-	-	Ks
7649.28	Lu	3	-	-	Me	7620.51	Cl II	-	-	[4]	Ks	7595.40	I II	-	-	[25]	Mu
7648.66	U	2	-	-	Me	7620.25	Re I	200 wl	-	-	Me	7595.16	Mo	15	-	-	Ks
7648.28	Sb	10 h	-	-	Me	7619.35	U	8	-	-	-	7595.13	Br	-	-	[3]	Ks
7648.12	Dy	2	-	-	Ks	7619.33	Sm	5	-	-	Kn	7595.07	U	2	-	-	-
7648.08	Co I	12 h	-	-	-	7619.21	Ni I	20	-	-	-	7594.95	Dy	2	-	-	Ks
7648.02	Sm II	100 d	-	-	Kn	7618.97	Os	2	-	-	-	7594.56	Gd	4	-	-	Ks
7647.64	Cb	4	-	-	Me	7618.93	Rb I	1000	-	-	IRz	7593.58	Ta	2	-	-	-
7646.71	Zr	10	-	-	-	7618.8	Yb	-	-	5	It	7592.96	Hf	2	-	-	Me
7646.66	Dy	10	-	-	Ks	7618.64	Co	2	-	-	-	7592.82	Sb	5 h	-	-	Wt
7646.15	Hg I	-	-	[3]	Su	7618.57	Xe II	-	-	[50]	Hu	7592.55	Sm	4	-	-	Kn
7646.02	Mn I	5 hl	-	-	Me	7618.56	I II	-	-	[10]	Mu	7592.19	Se I	-	-	[15]	Rd
7645.92	Nd	2	-	-	-	7618.33	A I	-	-	[30]	Me	7591.66	Mo	4	-	-	-
7645.87	Dy	10	-	-	Ks	7618.33	Ti I	4	-	-	-	7591.59	Br I	-	-	[2]	Ks
7645.82	Sm	80	-	-	Kn	7618.32	Re	3	-	-	Me	7591.36	Dy	10	-	-	Ks
7645.67	Pr	2	-	-	-	7618.20	Pt	2	-	-	Me	7591.20	V I	2 h	-	-	-
7645.64	Hf	2	-	-	Me	7618.03	A II	-	-	[80]	Bn	7590.57	Co I	35	-	-	-
7645.09	Sm II	200 d	-	-	Kn	7617.73	Dy	5	-	-	Ks	7590.54	U	2 W	-	-	-
7644.88	Gd	4	-	-	Ks	7617.72	Yt	4	-	-	Me	7590.49	Nd	2	-	-	Ks
7644.80	Cl II	-	-	[4]	Ks	7617.45	Sc I	6	-	-	Me	7590.43	Sm	25	-	-	Kn
7643.91	Sm	40	-	-	Kn	7617.39	Mo	2	-	-	Ks	7590.22	Ta	8	-	-	Ks
7643.91	Xe I	-	-	[100]	Me	7617.00	Ni I	60	-	-	-	7590.04	Sm	20	-	-	Kn
7643.61	U	2	-	-	-	7616.46	Br I	-	-	[6]	Ks	7589.61	Xe I	-	-	[6]	Me
7643.01	Sm II	30 d	-	-	Kn	7616.21	Dy	2	-	-	Ks	7589.33	A II	-	-	[250]	Bn
7642.88	Ba I	100	-	-	-	7615.74	Zr I	2 h	-	-	Ks	7589.6	bh Ti	8	-	-	L
7642.025	Xe I	-	-	[500]	I	7615.72	U	2	-	-	Me	7588.70	I I	-	-	[3]	Ev
7641.62	Br I	-	-	[2]	Ks	7615.69	Kr	-	-	[3 h]	Me	7588.48	Zn II	-	-	[50]	Ps
7641.24	U	2	-	-	Me	7614.70	Nd	2	-	-	-	7588.31	Sm	40 d	-	-	Kn
7641.16	Kr II	-	-	[150]	Mo	7614.50	Ti I	8	-	-	-	7588.22	Gd	6	-	-	-
7641.15	Dy	15	-	-	Ks	7614.48	Zr I	2 w	-	-	Ks	7587.76	Dy	2	-	-	Ks
7640.93	Re I	400 wl	-	-	Me	7614.11	W	3	-	-	-	7587.66	Re	2	-	-	Me
7640.84	Ta	4	-	-	Ks	7613.94	Sm II	30 d	-	-	Kn	7587.66	Nd	2	-	-	-
7640.08	Lu	9	-	-	Me	7613.54	V I	2 h	-	-	-	7587.55	U	2	-	-	-
7639.76	Nd	3	-	-	-	7612.94	Ru I	3	-	-	-	7587.413	Kr I	-	-	[1000]	IMe
7639.64	Sm	8	-	-	Kn	7612.94	La II	3	3	-	Me	7586.72	Co I	20	-	-	-
7639.54	U	4	-	-	-	7612.90	Zn II	-	-	[20]	Ps	7586.044	Fe I	10	-	-	Me
7639.25	Dy	2	-	-	Ks	7612.08	Zr I	4	-	-	-	7585.77	Sm II	60 d	-	-	Kn
7638.60	Gd	4 s	-	-	Ks	7611.90	Re I	100	-	-	Me	7585.28	Cb	5 h	1 h	-	Me
7638.03	V I	2 h	-	-	Me	7611.78	Gd	6	-	-	Ks	7584.680	Xe I	-	-	[200]	IMe
7637.94	Sm II	60 d	-	-	Kn	7611.54	Dy	5	-	-	Ks	7584.48	Sc	3	-	-	Me
7637.63	Co I	4	-	-	Me	7610.83	Zr I	2	-	-	Ks	7584.29	Xe I	-	-	[10]	Me
7637.	Bi II	-	-	[20]	Cf	7610.78	Sm	8 d	-	-	Kn	7584.18	Rn I	-	-	[2]	Rs
7636.85	Ba I	40	-	-	-	7610.77	U	2	-	-	Me	7583.94	Gd	6	-	-	-
7635.33	Al II	-	-	[5]	Ps	7610.46	Ba I	60	-	-	-	7583.91	Eu	400	-	-	Kn

Wave-length	Element	Intensities Arc Spk., [Dis]	R	Wave-length	Element	Intensities Arc Spk., [Dis]	R	Wave-length	Element	Intensities Arc Spk., [Dis]	R
7583.806	Ba	10	-	7558.36	Tm	200	-	7528.70	U	4	-
7583.796	Fe I	5	-	7558.36	U	2	-	7528.20	Ba I	15 h	-
7583.37	Se I	-	[25]	7557.81	Dy	2	-	7527.56	Yb	80	-
7583.26	Re	6 w	-	7557.67	Rh I	10	-	7526.57	Gd	4	-
7583.21	Cb	6	1	7556.8	Te I	-	[10]	7526.50	Ra	3	-
7582.86	Sm	6	-	7556.69	I I	-	[5]	7526.46	Nd	3	-
7582.09	U	2	-	7556.37	Hf	2	-	7526.29	Co I	2	-
7580.91	Sm II	6	-	7556.21	Mo	2	-	7525.52	Th	5	-
7580.91	U	2	-	7555.60	Ni I	40	-	7525.48	Kr	-	[20 h]
7580.82	Sm I	5	-	7554.70	Zr I	4	-	7525.14	Ni I	30	-
7580.19	Sm	8 d	-	7554.63	V I	2	-	7524.48	Re	20 w	-
7579.87	Cu II	-	10	7554.25	I I	-	[6]	7524.46	Kr II	-	[300 h]
7579.58	Mo	3	-	7554.08	Sm I	8	-	7524.29	Rh I	2	-
7579.54	Rh	3	-	7553.99	Co I	200	-	7524.13	Se I	7	-
7579.18	Nd	2	-	7553.96	Sc I	6	-	7523.93	Rn I	-	[6]
7579.02	Cu II	-	30	7553.94	Ta	2	-	7523.60	Ba I	15 h	-
7578.96	S	-	[200]	7553.7	Pb II	-	[2]	7522.78	Ni I	40	-
7578.75	V I	5 h	-	7553.03	Dy	10	-	7521.73	Sc	4 h	-
7578.72	Re I	200 w	-	7553.00	Zr I	2	-	7521.52	Dy	2	-
7578.09	Sm II	60 d	-	7552.8	Te I	-	[6 w]	7521.24	Eu	4	-
7578.07	Cl II	-	[10]	7552.24	F I	-	[40]	7521.03	Zr I	2	-
7577.49	Nd	2	-	7552.13	U	2	-	7520.90	Sm	20	-
7577.47	Dy	5	-	7552.01	Eu	4	-	7520.56	Ta	25	-
7577.22	Rh I	10	-	7551.79	Hg I	-	[6]	7519.96	Hg I	-	[3]
7576.95	Hf	2	-	7551.59	Br I	-	[3]	7519.91	Sm	15	-
7575.81	U	2	-	7551.46	Zr I	4 h	-	7519.77	Cb	20	4
7575.7	Te I	-	[6]	7550.63	Kr	-	[3]	7519.33	Zr	2 h	-
7575.22	Ba I	2 h	-	7550.46	W	3	-	7518.32	Sm II	15 d	-
7575.08	Se I	-	[20]	7550.23	U	4	-	7517.95	Zr I	2	-
7574.58	Cb	100	20	7549.97	Se I	-	[10]	7517.52	Kr	-	[2 h]
7574.44	Sc I	7	-	7548.71	Re	30	-	7517.41	U	2	-
7574.08	Ni I	30	-	7548.45	Xe II	-	[150]	7517.00	Sm	30 d	-
7573.92	V I	2	-	7547.71	Cb	2	1	7516.92	Rn I	-	[8]
7573.8	Sm	3	-	7547.28	Eu	15	-	7516.59	Dy	10	-
7573.47	Re	2	-	7547.09	Cl I	-	[25]	7516.03	Nd	2	-
7573.41	F I	-	[40]	7546.97	Nd	3	-	7515.93	Cb	40	10
7573.14	U	2	-	7546.57	Sm	20	-	7515.88	Fe II	-	8
7572.64	Mo	8	-	7545.37	Re	5 w	-	7515.74	Mn	2	-
7572.42	U	2 W	-	7544.74	Sm	50	-	7515.70	Zr I	2 h	-
7572.29	Sm	80 d	-	7544.59	Zr I	4 h	-	7515.5	Pt	-	2
7572.06	Ne I	-	[5]	7544.046	Ne I	-	[100]	7515.17	Ta	5 w	-
7571.53	Mo	3	-	7543.77	Dy	15	-	7514.96	Xe I	-	[3]
7570.95	Sm II	150 d	-	7543.62	Sm	15	-	7514.93	F I	-	[30]
7570.93	Xe I	-	[6]	7543.5	Pr	5	-	7514.88	Hf II	-	2
7570.87	Br I	-	[2]	7543.41	Ba I	15 h	-	7514.651	A I	-	[200]
7570.75	U	2	-	7543.10	Kr	-	[3]	7514.54	Xe I	-	[8]
7570.30	V I	2	-	7543.06	Lu	2	-	7514.40	U	2	-
7570.09	Cu I	50	-	7542.81	Hg I	-	[3]	7514.13	Rn I	-	[8]
7570.02	Ru	10	-	7542.02	Rh I	5	-	7513.98	Rh	5	-
7569.91	W	6 w	-	7541.5	bh Zr	4	-	7513.77	Nd	5	-
7569.23	Ta	3	-	7541.42	Sm II	100 d	-	7513.40	Ba I	2 h	-
7569.16	Br	-	[2]	7541.02	Pr	2	-	7513.33	Sm I	2	-
7568.925	Fe I	2	-	7540.98	Nd	2	-	7513.13	Cr	5	-
7567.82	Re	6	-	7540.62	Zr I	2	-	7513.01	Br I	-	[50 I]
7566.08	Gd	6	-	7540.04	Sm II	20 d	-	7512.60	U	2	-
7566.06	U	4	-	7539.73	La I	10	3	7511.11	Nd	4	-
7566.00	Nd	2	-	7538.26	Nd	4	-	7511.045	Fe I	20	1
7565.53	Cl II	-	[18]	7537.43	W	3	-	7510.75	Au I	20	-
7565.49	Ra	-	[3]	7536.71	Yt	3	1	7510.42	A I	-	[10]
7565.35	Hf II	-	2	7536.42	Re	2	-	7510.08	U	2	-
7564.96	Co I	20	-	7535.81	Br I	-	[3]	7508.99	W	4	-
7564.22	Hf	2	-	7535.775	Ne I	-	[300]	7508.97	Se I	-	[10]
7563.83	Sm	15	-	7535.74	Nd	2	-	7508.47	Eu	12	-
7563.21	Nd	2	-	7534.2	Sm	6 d	-	7507.85	Sm	12	-
7563.13	Yt I	10	4	7533.91	U	20	-	7507.28	Fe I	40	-
7563.03	Gd	12	-	7533.7	bh V	2	-	7507.05	Eu	3	-
7562.96	Dy	10	-	7533.59	La I	2	-	7506.94	U	2 W	-
7562.94	Sm	50 d	-	7533.48	Co I	40	-	7506.51	Zr	2	-
7562.93	Hf	8	-	7533.42	Fe II	-	2	7506.44	Se I	-	[5]
7562.44	U	2	-	7533.3	Sm	6 d	-	7505.80	Sm	10 d	-
7562.12	Zr I	4 Wh	-	7533.14	Dy	5	-	7505.34	Gd	6	-
7562.01	Cu II	-	25	7533.00	Eu	15	-	7505.13	A II	-	[100]
7561.08	Hf II	1	10	7532.20	Eu	3	-	7505.10	U	2	-
7561.06	Co I	15	-	7532.11	Cb	2	1	7504.47	Mo	15	-
7560.58	U	2	-	7532.07	Ru	6	-	7504.16	W	2	-
7560.31	Zr I	2	-	7531.68	U	2	-	7503.9	Pr	3	-
7560.15	Sm II	20 d	-	7531.5	Te I	-	[5]	7503.90	Dy	2	-
7560.09	Zr I	2	-	7531.35	Sm	10	-	7503.867	A I	-	[700]
7559.81	Dy	10	-	7531.171	Fe I	80	-	7503.38	Sm	6 d	-
7559.79	Xe I	-	[40]	7530.70	Xe II	-	[30]	7503.00	Xe II	-	[3 h]
7559.65	Co I	15	-	7530.22	Sm	8 d	-	7502.92	Zr I	2 h	-
7559.62	Ni I	2	-	7529.58	Ru	4	-	7502.72	Co I	3 h	-
7559.61	Ru I	100	-	7528.98	Nd	4	-	7502.39	Sm II	50 d	-
7558.7	Pb II	-	[100]	7528.72	Gd	4	-	7502.34	U	2	-
7558.45	Zr I	2 h	-	7528.70	Eu	200	-	7502.33	Bi	6	-

7501.6—7427.2 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk.,	R			Arc	Spk.,	R			Arc	Spk.,	R
7501.62	Mo	3	-	-	7475.43	Mo	5	-	-	7449.34	Fe II	-	6	-
7501.13	Xe I	-	[20]	Me	7475.40	Ru	50	-	-	7449.28	Sm I	8	-	Kn
7499.87	Ra	-	[15]	Rs	7474.94	Ti I	25	-	-	7449.09	S I	-	[5]	Ms
7499.75	Ru	200	3	-	7474.35	Co I	4	-	Me	7448.76	Nd	3	-	Ks
7499.50	Sm	3	-	Kn	7474.01	Xe I	-	[25]	Me	7448.33	Yb	30	-	Me
7499.45	Pr	3	-	-	7474.0	bh V	3	-	L	7447.88	U	3	-	-
7498.84	La I	5	-	-	7473.226	O I	-	[15]	Fh	7447.58	Re	8	-	Me
7498.71	Sm I	4	-	Kn	7472.425	Ne I	-	[50]	Ps	7447.39	Fe I	3 h	-	-
7497.43	U	2	-	-	7472.18	Yt I	3	-	-	7447.34	Mo	10 h	-	-
7497.26	Sm I	3	-	Kn	7472.04	Ta	30 h	-	-	7446.77	Rh I	5	-	-
7496.94	Rh	2	-	-	7472.01	Xe I	-	[40]	Me	7445.776	Fe I	150	-	Me
7496.12	Ti I	35	-	-	7471.54	W	2	-	-	7445.45	Ru	4	-	-
7495.62	Pr	4	-	-	7471.374	O I	-	[15]	Fh	7445.41	Sm I	100	-	Kn
7495.36	Xe II	-	[40]	Hu	7471.37	Al II	-	[5]	Sy	7444.64	Kr	-	[2 h]	Me
7495.35	Ta	4	-	-	7471.18	A I	-	[4]	Ms	7444.59	Eu	10	-	Kn
7495.24	Rh I	100	-	-	7470.89	Rn I	-	[15]	Rs	7444.56	Sm	150	-	Kn
7495.088	Fe I	200	-	Me	7470.76	Sm	100	-	Kn	7444.35	Cl I	-	[2]	Ks
7494.88	Yt I	3	2	-	7470.53	Eu	30 W	-	Kn	7443.81	U	3	-	-
7494.15	Kr I	-	[30]	Me	7470.45	Gd	20	-	Ks	7443.50	Mn	2	-	Me
7494.07	Sm II	8	-	Kn	7469.46	Er	10	-	Ed	7443.43	Co I	10 h	-	-
7494.04	Re	4	-	-	7469.08	Ta	5	-	-	7443.40	S I	-	[25]	Ms
7493.58	Kr I	-	[20]	Me	7469.04	I I	-	[500]	Ev	7443.07	U	2	-	Me
7493.47	So I	-	[30]	Rd	7468.92	Rn I	-	[10]	Rs	7443.022	Fe I	8	-	Bu
7492.64	Rh I	3	-	Me	7468.91	Ru	150	-	-	7442.75	Re	2	-	Me
7492.23	Xe I	-	[20]	Me	7468.79	N I	-	[200]	Ks	7442.56	N I	-	[100]	Ks
7492.10	Cl I	-	[10]	Ks	7468.25	S	-	[10]	Ms	7442.39	Rh I	100	-	-
7491.88	A I	-	[2]	Rs	7468.2	bh Zr	3	-	L	7442.33	Hf	1	3	Me
7491.84	Sm	2	-	Kn	7468.18	W	2	-	-	7442.17	Gd	5	-	Ed
7491.678	Fe I	20	-	Bu	7467.99	Kr	-	[6 wh]	Me	7442.00	Sm	3	-	Kn
7491.00	Eu	15 W	-	Kn	7467.75	Ta	40	-	-	7441.94	Xe I	-	[20]	Me
7490.70	Dy	2	-	Ks	7467.57	Zr I	3	-	Ks	7441.89	Gd	200	-	-
7490.58	I I	-	[70]	Ev	7466.2	Eu	2	-	Kn	7441.52	Lu	20	-	Me
7490.22	Tm	100	-	Me	7465.01	Kr I	-	[3 h]	Me	7440.98	Fe I	18 h	-	Bu
7490.18	Er	8	-	Ed	7464.38	Gd	200	-	-	7440.80	Sm	4	-	Kn
7489.61	Ti I	150	-	-	7463.86	Hf	10	-	Me	7440.71	Re	6	-	Me
7489.47	Gd	40	-	-	7463.70	Ru	4	-	-	7440.60	Ti I	100	-	-
7489.46	Cl I	-	[5]	Ks	7463.04	La I	10	-	-	7440.46	A II	-	[90]	Bn
7489.37	Co I	10	-	-	7462.40	Cl I	-	[5]	Ks	7440.44	Sm	3	-	Kn
7489.14	F I	-	[50]	En	7462.38	Fe II	3	20	Kn	7440.17	Ta	40	-	-
7489.13	Re	4	-	Me	7462.31	Cr I	80	-	-	7439.86	Zr I	15	-	-
7488.872	Ne I	-	[500]	IMe	7461.434	Fe I	3	-	Bu	7438.899	Ne I	-	[300]	IMe
7488.73	Ni I	2 h	-	-	7460.82	Ta	5	-	-	7438.42	Sr I	2	-	Mo
7488.15	V I	2	-	-	7460.52	Sm	10	-	Kn	7438.33	Ru	4	-	-
7488.12	Re	10	-	Mo	7459.97	Dy	2	-	Ks	7438.22	U	3	-	-
7488.06	Ba I	200	-	-	7459.75	Ba I	300 hl	-	-	7438.15	Cu II	-	15	Sh
7486.90	Pd I	8	-	-	7459.53	Er	4	-	Ed	7437.78	Re	4	-	Me
7486.862	Kr I	-	[100]	Me	7459.46	Cl I	-	[2]	Ks	7437.56	Nd	5	-	Ks
7486.05	Pt	5	-	-	7459.27	W	2	-	-	7437.56	Hf	3	20	Me
7485.90	Ta	300	-	-	7457.89	U	2	-	-	7437.16	Co I	30	-	-
7485.90	V I	2	-	-	7457.36	Co I	200 W	-	-	7436.59	Eu	100 W	-	Kn
7485.79	Ru	150	-	-	7457.05	Dy	3	-	-	7436.25	A I	-	[10]	Ms
7485.74	Mo	100	-	-	7456.96	Lu	5	-	Me	7436.02	Cb	6	1	Me
7485.33	Rn I	-	[6]	Rs	7456.67	Mo	5 h	-	-	7435.78	Kr II	-	[200 h]	Me
7484.56	Hf	3	-	Me	7456.34	W	2	-	-	7435.73	V	2	-	-
7484.4	bh Zr	3	-	L	7456.32	Cb	6	1	Me	7435.68	Cl I	-	[5]	Ks
7484.24	A I	-	[15]	Ms	7455.20	Yt I	3	-	-	7435.33	A I	-	[30]	Ms
7483.52	La II	20	15	-	7455.16	In	-	20	Me	7435.19	Ta	5 h	-	-
7483.35	W	4	-	-	7454.70	Sm	3	-	Kn	7435	bh C	-	-	L
7483.13	Rn I	-	[15]	Rs	7454.38	Sm	3	-	Kn	7434.74	Kr II	-	[15 h]	Me
7483.01	Dy	3	-	Ks	7454.35	Ta	5 h	-	-	7434.50	Gd	20	-	-
7482.72	F I	-	[80]	En	7454.33	Hg I	-	[50]	Su	7434.14	Sm	8	-	Kn
7481.99	Sm II	25	-	Kn	7454.03	U	5	-	-	7434.10	Mo	10	-	-
7481.6	Eu	2 W	-	Kn	7453.845	In II	-	[20]	Ps	7433.92	V	2	-	-
7481.36	Th	2	-	Fd	7453.59	Ru	5	-	-	7433.85	Co II	-	5	Sh
7481.15	Re	12	-	Me	7453.03	Sm II	30	-	Kn	7433.48	Ni I	2	-	-
7481.09	Tm	100	-	Me	7452.899	In II	-	[12]	Ps	7433.10	Zr I	3	-	-
7480.652	O I	-	[30]	Fh	7452.88	Cb	6	1	Me	7432.59	Gd	20	-	-
7479.96	Sm II	4	-	Kn	7452.85	Mo	15 h	-	-	7432.22	U	2	-	-
7479.58	Zr I	3	-	-	7452.80	Sm II	15	-	Kn	7431.93	Re	4	-	Me
7479.40	Sm	15	-	Kn	7452.62	U	2	-	-	7431.55	V	2	-	-
7479.148	O I	-	[30]	Fh	7452.48	Cr	3	-	-	7431.18	Sm	6	-	Kn
7478.8	Yt I	3	-	Me	7452.082	In II	-	[5]	Ps	7430.87	Fe I	5 wh	-	-
7478.79	Zn II	-	[50]	Ps	7451.96	Sm	4	-	Kn	7430.80	Rh	10	-	-
7478.77	Co I	3	-	-	7451.71	Pr	5	-	-	7430.78	Ru	9	-	-
7478.63	Re	8	-	Me	7451.40	W	3	-	-	7430.58	Fe I	4	-	Kn
7478.20	Cb	15	2	Mo	7451.11	Nd	5	-	Ks	7430.27	Th	2	-	Fd
7477.47	Gd	20	-	Ks	7451.08	Dy	2	-	Ks	7430.20	Gd	40	-	-
7477.264	O I	-	[15]	Fh	7451.00	Xe I	-	[25]	Me	7429.27	Se I	-	[200]	Rd
7476.54	F I	-	[15]	En	7450.65	Ru	4	-	-	7429.00	Co I	10	-	-
7476.473	O I	-	[70]	Fh	7450.4	Yb	2	-	It	7428.96	Th	3	-	Fd
7476.30	Fe I	12 h	-	Me	7450.36	Eu	6	-	Kn	7428.50	Cb	6	1	Me
7476.2	S	-	[50]	Bz	7450.33	S I	-	[15]	Ms	7428	Sb II	-	35	Dv
7476.18	Ba I	30 h	-	-	7450.30	Yt II	15	-	10	7427.55	Mo	3	-	-
7476.08	U	2	-	Me	7450.00	Rn I	-	[600]	Rs	7427.43	Nd	2	-	-
7475.74	Rh I	100	-	Me	7449.42	Al II	-	[18]	Ps	7427.26	Cu	3	-	Me

Wave-length	Element	Intensity Arc	Spk., [Dis]	R	Wave-length	Element	Intensity Arc	Spk., [Dis]	R	Wave-length	Element	Intensity Arc	Spk., [Dis]	R
7426.97	Dy	6	-	-	7406.21	Yt II	3	4	-	7384.6	Pt	-	2	It
7426.81	Se I, II	-	[100]	Rd	7405.92	Yb	3	-	Me	7384.52	Gd	5	-	Ka
7426.57	Eu	500	-	Kn	7405.85	Si I	300	-	Ks	7384.07	Re I	2	-	Me
7426.56	Gd	80	-	-	7405.79	Sr	2	-	Lr	7383.980	A I	-	[400]	IMe
7426.3	bh Zr	2	-	L	7405.77	Xe I	-	[3]	Me	7383.9	Cd	1000	-	Pa
7425.89	Br I	-	[100]	Ks	7405.76	Gd	40	-	Ks	7383.88	Se I	-	[100]	Rd
7425.82	In	-	12	-	7405.50	Sb	5 h	-	Wt	7383.74	Th	2	-	Fd
7425.64	F I	-	[150]	En	7405.00	Sm	50	-	Kn	7383.63	Zr	3	-	-
7425.54	Kr I	-	[60]	Me	7404.93	Ta	3	-	Ks	7383.55	Sm	15	-	Kn
7425.50	U	18	-	-	7404.68	Eu	10 W	-	Kn	7383.14	Mo	6	-	-
7425.24	A I	-	[12]	Ms	7404.51	Xe I	-	[12]	Me	7382.92	Fe I	6 h	-	-
7424.63	Si I	20	-	Ks	7404.50	Mo	5	-	-	7382.72	La I	5	-	-
7424.43	Sm II	3	-	Kn	7404.41	Eu	30 W	-	Kn	7382.68	Re	4	-	Me
7424.11	S I	-	[5]	Ms	7404.34	Cu II	-	100	Sh	7382.50	Cb	150	30	Me
7424.05	Xe I	-	[20]	Me	7404.27	Re	6	-	Me	7382.18	Cu II	-	10	Sh
7423.88	N I	-	[50]	Ks	7403.30	Sm I	5	-	Kn	7381.94	Ni I	40	-	-
7423.83	Zr I	3 h	-	Ks	7403.17	Dy	2	-	Ks	7381.82	Nd	2	-	-
7423.81	Sm	3	-	Kn	7402.38	Sm II	4	-	Kn	7381.60	Dy	2	-	Ks
7423.69	Hf	5	15	Me	7402.10	I I	-	[300]	Ev	7381.08	Ru	9	-	-
7423.68	Rh	2 h	-	Me	7402.04	Eu	4 W	-	Kn	7381.	Bi II	-	20 w	Cf
7423.54	Si I	500	-	Ks	7401.689	Fe	10	-	Me	7380.45	A II	-	[8]	Bn
7423.17	Ti I	35	-	-	7401.29	Nd	5	-	-	7380.34	Se I	-	[60]	Rd
7422.75	Zr I	3 h	-	-	7401.23	Sm	4	-	Kn	7380.30	Gd	40	-	-
7422.30	Ni I	600	-	-	7401.13	Ni I	15	-	-	7379.71	La I	10	-	Ks
7422.26	A I	-	[6]	Ms	7400.90	Zr I	3	-	-	7379.70	U	15	-	-
7420.70	Cu II	-	8	Sh	7400.5	Xe II	-	[5 h]	Hu	7379.19	Zr	3	-	Ks
7419.83	Cb	6	1	Me	7400.41	Xe I	-	[30]	Me	7378.69	Sm	6	-	Kn
7419.59	Cr	3	-	-	7400.210	Cr I	80	-	-	7378.38	Xe II	-	[25]	Hu
7419.35	Ni I	2	-	-	7400.0	Eu	4 W	-	Kn	7378.04	Sm I	4	-	Kn
7419.04	Rn I	-	[20]	Rs	7399.89	Cu II	-	20	Sh	7377.85	Zr I	3 h	-	Ks
7418.92	Ta	2	-	-	7399.6	Yb	2	-	It	7377.77	Se I	-	[20]	Hd
7418.674	Fe	10	-	Me	7399.30	Zr	5	-	-	7377.77	Ru	20	-	-
7418.16	Nd	2	-	-	7399.2	Cd I	70	-	Ps	7377.59	Gd	40	-	Ks
7418.1	Hg II	-	[40]	Ps	7398.96	Hf II	-	10	Me	7377.55	Yb	4	-	Me
7417.99	Gd	50	-	-	7398.94	Sm	5	-	Kn	7377.27	Gd	8	-	-
7417.89	Zr I	6	-	-	7398.77	Yt I	12	3	-	7376.95	Th	2	-	Fd
7417.52	Ba I	100	-	-	7398.68	F I	-	[400]	En	7376.85	Mn	2	-	Me
7417.38	Co I	300 W	-	-	7397.96	Gd	5	-	Ks	7376.69	Sm II	60	-	Kn
7417.02	Sm	10	-	Kn	7397.92	Sm	2	-	Kn	7376.46	Fe	-	10 wh	Kn
7416.57	U	3	-	-	7397.76	Ce	8	-	-	7376.434	Fe	8 h	-	Kn
7416.55	I	-	[50]	Ev	7396.99	U	6	-	-	7376.42	Gd	40	-	-
7416.44	Re	6	-	Me	7396.04	Re	4	-	Me	7376.06	Dy	2	-	Ks
7416.00	Si I	200	-	Ks	7395.8	Hg	-	[10]	Lf	7375.57	Rh	15	-	-
7415.81	Mn	2	-	Me	7394.91	Gd	40	-	Kn	7375.53	Ba I	50 hl	-	-
7415.37	Si I	15	-	Ks	7394.86	Eu	12 W	-	Kn	7375.40	U	2	-	Me
7414.61	I I	-	[5]	Ev	7393.98	Sm	20	-	Kn	7375.14	Sm	4	-	Kn
7414.54	Co I	5	-	-	7393.93	Ru	150	-	-	7374.80	Zr I	3	-	Ks
7414.51	Ni I	200	-	-	7393.792	Xe I	-	[150]	I	7374.1	Eu	2 W	-	Kn
7414.26	Ba I	4 hl	-	Me	7393.63	Ni I	600	-	-	7373.83	Gd	40	-	-
7414.24	Zr	3	-	Ks	7393.49	V I	3	-	-	7373.80	Sm II	3	-	Kn
7414.12	Cl I	-	[150]	Ks	7393.433	Th	5	-	Fd	7373.5	Hg	-	[10]	Wd
7414.02	Se I	-	[15]	Rd	7393.37	Sm II	8	-	Kn	7373.50	Zr I	3	-	-
7413.64	I	-	[30]	Ev	7393.0	Cd	70	-	Ps	7373.02	Si I	10 w	-	Ks
7413.41	Re	4	-	Me	7392.97	A I	-	[15]	Ms	7372.58	U	2 h	-	-
7413.36	Cr	2	-	-	7392.71	Eu	5 W	-	Kn	7372.54	Se I	-	[40]	Rd
7413.32	Mo	4	-	-	7392.42	Ba I	400	-	-	7372.118	A I	-	[100]	I
7412.84	Rn I	-	[6]	Rs	7392.11	U	3	-	-	7371.95	U	3	-	-
7412.44	Dy	5	-	-	7391.99	Se II	-	[125]	Mz	7371.71	Hg I	-	[80]	Su
7412.31	A I	-	[15]	Ms	7391.92	Pd I	10	-	-	7371.51	Sm I	50	-	Kn
7412.24	Sm	15	-	Kn	7391.36	Mo	50	-	-	7371.12	Sm	2	-	Kn
7411.39	Zr I	3 h	-	-	7390.99	U	3	-	-	7370.82	Se I	-	[80]	Rd
7411.25	I I	-	[50]	Ev	7390.71	Re	8	-	Me	7370.28	Gd	80	-	-
7411.178	Fe I	100	-	Me	7390.70	Hf	3	10	Me	7370.27	Eu I	700	-	-
7410.73	Sm	15	-	Kn	7389.425	Fe I	100	80 h	-	7370.21	U	2	-	Me
7410.46	Hg I	-	[10]	Su	7389.28	Cl II	-	[7]	Ks	7369.69	Eu	200 W	-	Kn
7410.25	Ru	5	-	-	7389.15	Eu	40 W	-	Kn	7369.09	Ta	100	-	-
7410.14	Xe II	-	[6 wh]	Hu	7389.03	Sm I	5	-	Kn	7368.65	U	2	-	Me
7409.07	As I	8	-	Me	7388.70	Co I	200	-	-	7368.12	Pd I	20	-	-
7409.96	Ba I	30 l.i	-	-	7388.3	Pd	-	3	It	7367.9	Sm I	2	-	Kn
7409.73	Nd	5	-	Ks	7388.	Bi II	-	5 w	Cf	7367.70	Eu	10 W	-	Kn
7409.70	Lu	7	-	Me	7387.79	Sn II	-	15 W	Mc	7367.3	Hg I	-	[8]	Su
7409.51	Eu	3	-	Kn	7387.34	Eu	15 W	-	Kn	7367.24	In	-	12	Sq
7409.47	Re I	30	-	Me	7387.12	Sm II	2	-	Kn	7367.20	Zr I	3	-	-
7409.43	Co	10	-	Si	7386.64	Rh I	4	-	-	7367.02	Kr I	-	[2 h]	Me
7409.39	Ni I	400	-	-	7386.402	Fe	40	25 h	Bu	7366.80	Kr I	-	[2 h]	Me
7409.11	Si I	100	-	Ks	7386.35	Re	30	-	Me	7366.60	Ti	18	-	-
7408.2	Pd	-	2	It	7386.21	Ni I	100	-	-	7366.06	Sm	3	-	Kn
7408.170	Rb I	500	-	IRz	7386.04	V I	3	-	-	7365.73	Eu	4	-	Kn
7408.12	Sr I	3	-	Me	7386.003	Xe I	-	[100]	IMe	7365.28	Hf	10	-	Me
7407.95	Os	10	-	-	7385.91	Gd	40	-	Ks	7365.25	Mo	7	-	-
7407.89	Ta	150	-	-	7385.485	Th	8	-	Fd	7364.41	Mo	5	-	-
7407.62	Dy	2	-	Ks	7385.42	Sm	4	-	Kn	7364.11	Ti	150	-	-
7407.49	Ru I	4	-	-	7385.3	Cd I	800	-	Ps	7364.10	Sm	50	-	Kn
7407.02	Kr II	-	[400 h]	Me	7385.24	Ni I	150	-	-	7364.05	Os	10	-	-
7406.63	Nd	2	-	-	7385.08	W	7	-	Me	7363.95	Fe I	8 h	-	-

7363.2—7303.0 Å.

Wave-length	Element	Intensity Arc	Spk. [Dis]	R	Wave-length	Element	Intensity Arc	Spk. [Dis]	R	Wave-length	Element	Intensity Arc	Spk. [Dis]	R
7363.28	Nd	5	-	Ks	7342.80	Mn	2	-	Me	7321.38	Nd	5	-	-
7363.20	V I	25	-	-	7341.79	Mo	3	-	-	7320.98	Rn I	-	[12]	-
7363.01	Sm II	3	-	Kn	7341.66	U	2 h	-	-	7320.91	La I	1	-	-
7362.83	Kr	-	[4]	Me	7341.20	Th	2	-	Fd	7320.70	Fe II	25	18 h	Kn
7362.70	Sm	3	-	Kn	7341.16	Kr	-	[2]	Me	7320.05	Hf	15	25	Me
7362.62	Gd	5	-	Ks	7340.19	Ta	10 h	-	-	7319.94	Xe I	-	[15]	Me
7362.59	Er	4	-	Ed	7340.11	Eu	5	-	Kn	7319.84	Ta	30	-	-
7362.55	V I	2	-	-	7340.03	Zr I	3	-	Ks	7319.19	Br	-	[10]	Ks
7362.31	Al I	5 hl	[50]	Ps	7339.57	Ba I	4 h	-	Me	7318.90	Gd	20	-	Ks
7362.25	Eu	50 W	-	Kn	7339.30	Xe II	-	[150]	Hu	7318.70	Sm	3	-	Kn
7362.12	Re	4	-	Me	7338.96	Se I	-	[50]	Rd	7318.4	bh Ca	3	-	L
7361.65	Mo	10	-	-	7338.92	V I	50	-	-	7318.39	Ti I	80	-	-
7361.59	Al I	-	[20]	Ps	7338.80	Sm	2	-	Kn	7318.12	I I	-	[15]	-
7361.56	Zr I	3	-	Ks	7338.04	Sm	50	-	Kn	7318.08	Zr I	8	-	-
7361.44	V I	10	-	-	7336.480	Xe I	-	[50]	IMe	7318.02	Re	4	-	Me
7361.34	Kr I	-	[2]	Rs	7336.28	Eu	300 W	-	Kn	7317.77	Sm II	4	-	Kn
7360.95	Re	4	-	Me	7335.97	Zr I	8	-	-	7317.30	Zr	3	-	-
7360.66	Zr I	5	-	-	7335.92	Sm II	3	-	Kn	7317.03	Cb	15	2	Me
7360.38	Mo	8	-	-	7335.72	Al I	-	[2]	Ps	7316.9	Hg I	-	[3]	Su
7359.96	Kr I	-	[5]	Me	7335.6	bh Zr	2	-	L	7316.87	Xe I	-	[20]	Me
7359.29	Ba I	20	-	Mo	7335.10	Sm	10	-	Kn	7316.85	Nd	2	-	-
7358.66	V I	2	-	-	7334.66	Fe	-	8	Kn	7316.505	Rb II	-	[50]	Rr
7358.60	Zr	3	-	Ks	7334.33	Kr	-	[4]	Me	7316.31	Sm	10	-	Kn
7358.37	Sm	3	-	Kn	7334.17	La I	100	-	-	7316.29	Er	6	-	Ed
7357.74	Ti	200	-	-	7333.71	Mo	8	-	-	7316.272	Xe I	-	[70]	IMe
7356.96	Ta	100	-	-	7333.70	Br	-	[5]	Ka	7316.1	Re	8	-	Me
7356.65	Eu	30 W	-	Kn	7333.62	Fe I	8 h	-	Bu	7316.00	A I	-	[30]	Ms
7356.54	V I	20	-	-	7333.49	Ni I	2	-	-	7315.73	Co I	25	-	-
7356.10	Hf	10	-	Mo	7332.96	Yt II	2	3	-	7315.67	Ru	4	-	-
7355.99	Sm	3	-	Kn	7332.73	Zr	3 h	-	Ks	7315.56	Ti I	20	-	-
7355.90	Cr I	80	-	-	7332.65	Sm I	100	-	Kn	7315.33	Mo	4 w	-	-
7355.58	Xe I	-	[40]	Me	7332.43	Rn I	-	[10]	Rs	7314.54	U	2	-	-
7355.48	Kr	-	[4]	Me	7332.4	Hg	-	[5]	Wd	7314.31	F I	-	[40]	En
7355.44	Ta	10	-	-	7332.30	Cb	6	1	Me	7314.00	Sm I	8	-	Kn
7355.34	Er	4	-	Ed	7332.26	Ti I	8	-	Me	7313.74	F I	-	[10]	En
7355.124	In II	-	[5]	Ps	7331.95	F I	-	[200]	En	7313.72	Zr I	5	-	Ks
7354.931	In II	-	[12]	Ps	7331.86	U	3	-	-	7313.64	Eu	60 W	-	-
7354.699	In II	-	[20]	Ps	7331.74	Cu II	-	15	Sh	7313.28	Gd	150	-	-
7354.59	Co I	150	-	-	7331.53	Mo	12 h	-	-	7313.18	Ta	3	-	-
7354.09	Sm II	3	-	Kn	7331.33	Sm	2	-	Kn	7313.10	Yb	20	-	Me
7353.47	Co I	25	-	-	7331.0	Eu	3	-	Kn	7313	Hg I	-	[5]	Su
7353.34	Zr	3	-	Ka	7330.97	Ti I	40	-	Me	7312.66	Gd	8	-	Ed
7353.316	A I	-	[100]	IMe	7330.62	Yt	8	-	Me	7312.63	Ru	5	-	-
7353.16	Cb	60	10	Mo	7330.23	Gd	5	-	Ks	7312.60	Sm	5	1	Kn
7352.86	Ta	150	-	-	7330.12	Pb	10	-	Wt	7311.93	Cb	6	-	Ms
7352.16	Ti I	12	-	-	7329.90	Ce	5	-	-	7311.71	A I	-	[100]	Ms
7352.03	Re	50	-	Me	7329.72	V I	2	-	-	7311.62	Zr I	5	-	-
7351.90	Ru	4	-	-	7329.37	Re	10	-	Me	7311.59	Br	-	[5]	Ks
7351.585	In II	-	[50]	Ps	7329.02	Mo	15 h	-	-	7311.101	Fe I	60	25 h	Bb
7351.56	Fe I	18	7 h	-	7328.97	Se I	-	[300]	Rd	7311.02	F I	-	[125]	En
7351.487	In II	-	[50]	Ps	7328.64	Hf II	3	30	Me	7310.87	Hg	-	[15]	Su
7351.40	Ni I	3 h	-	-	7328.38	Cb	20	3	Me	7310.33	Eu	30 W	-	Kn
7351.36	I II	-	[60]	Ka	7328.34	Th	3	-	Fd	7310.27	Ra I	-	[500]	Rs
7351.160	Fe I	8 h	7 h	Bu	7327.82	Zr	3	-	-	7310.24	Fe II	-	6	Kn
7350.906	In II	-	[12]	Ps	7327.67	Ni I	25	-	-	7310.10	Sm	4	-	Kn
7350.78	A I	-	[6]	Ms	7327.6	bh Ca	2	-	L	7310.06	Pd I	5	-	Me
7350.371	In II	-	[50]	Ps	7327.47	Hg I	-	[10]	Su	7309.64	Ni I	3	-	-
7350.09	Yb	40	-	Me	7327.09	Gd	40	-	-	7309.41	Sr I	200	-	-
7350.004	In II	-	[30]	Ps	7327.08	Sm	30	-	Kn	7309.35	F	3	-	Kn
7349.567	In II	-	[30]	Ps	7327.00	Kr	-	[5]	Me	7309.03	Sm	-	[50]	En
7348.71	Ru	6	-	-	7326.51	Mn I	500	-	Me	7309.02	Sm	40	-	Kn
7348.56	Br I	-	[500 I]	Ks	7326.50	Ba I	10 h	-	Me	7308.46	La	2 h	-	Me
7348.49	Mo	15	-	-	7326.146	Ca I	400	-	IWg	7308.3	bh Ca	2	-	Kn
7348.11	A II	-	[4]	Rt	7326.1	Eu	3	-	Kn	7307.97	Fe II	-	25 h	L
7347.7	Yb	3	-	It	7326.02	Cu II	-	15	Sh	7307.957	Fe	30	-	Bu
7347.30	Sm I	100	-	Kn	7325.95	Ta	10	-	-	7307.93	Ne	-	[15]	Gr
7346.88	Re	2	-	Me	7325.57	Ne I	-	[15]	Gr	7307.55	Re I	8	-	Me
7346.46	Yt I	40	4	-	7325.44	Sm II	10	-	Kn	7307.37	Xe I	-	[5 h]	Me
7346.41	Ta	100	-	-	7325.34	Mo	5 h	-	-	7307.36	Zr	10	-	-
7346.37	Hg II	-	[1000]	Ps	7324.89	Gd	80	-	-	7307.23	Ba I	3 h	-	Me
7346.24	Eu	20 W	-	-	7324.86	Th	3	-	Fd	7307.13	Ti	30	-	-
7346.2	Cd I	1000	-	Ps	7324.20	Re	12	-	Me	7306.78	V I	2	-	-
7345.31	La I	125	-	-	7323.92	Cb	20	2	Me	7306.61	Fe I	25	12 h	Bu
7345.18	Dy	3	-	Ks	7323.88	Sm	3	-	Kn	7306.60	Cu II	-	12	Sh
7345.15	V	2	-	-	7323.78	Sc I	2	-	Me	7306.58	Sm	3	-	Kn
7344.76	Sm II	5	-	Kn	7323.71	Zr	3	-	-	7306.21	Zr I	5	-	Ri
7344.72	Ti I	200	-	-	7323.56	Ru	25	-	-	7305.87	Ti I	6	-	Me
7344.55	Br I	-	[20]	Ks	7323.35	Gd	5	-	Ks	7305.25	Yb	15	-	Ms
7344.42	La I	2	-	Ri	7323.12	Nd	2	-	-	7304.82	Ne I	-	[30]	Ms
7344.16	Hg II	-	[3]	Ps	7323.05	Xe I	-	[2]	Me	7304.74	Sm	10	-	Kn
7343.96	Zr I	5	-	-	7322.72	Ta	30	-	-	7304.46	Ba	5 h	-	Me
7343.4	Sb II	1	3	Lg	7322.53	Mo	7	-	Ks	7304.16	Sm	2	-	Kn
7343.37	Xe II	-	[25 wh]	Hu	7321.76	Hf	3	10	Me	7303.754	In II	-	[50]	Ps
7343.33	Ta	2	-	-	7321.50	V I	2	-	-	7303.348	In II	-	[40]	Ps
7342.83	Cl I	-	[2]	Ks	7321.452	Xe I	-	[80]	IMe	7303.012	In II	-	[30]	Ps

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
7303.0	bh Ti	5	-	-	L	7283.33	Sm	30	-	-	Kn	7266.49	Xe I	-	-	[25]	Me
7302.89	Mn	300 h	-	-	Me	7282.94	Sm	2	-	-	Kn	7266.29	Ti I	25	-	-	-
7301.80	Xe II	-	-	[100]	Hu	7282.82	Rh I	2	-	-	-	7266.22	Ni I	15	-	-	-
7301.74	Ta	200	-	-	-	7282.54	Gd	5	-	-	Ks	7265.45	Re	6	-	-	Me
7301.68	Hg	-	-	[25]	Su	7282.47	U	2	-	-	-	7265.33	Ti I	8	-	-	-
7301.38	Mn	2	-	-	Me	7282.39	Fe	5 h	-	-	Bu	7265.31	Se I	-	-	[30]	Rd
7301.25	Kr I	-	-	[5]	Me	7282.34	La II	70	125	-	-	7265.23	A I	-	-	[3]	Ms
7301.23	Gd	150	-	-	-	7282.21	Sm I	20	-	-	Kn	7264.99	Fe	-	-	10	Kn
7301.16	Eu II	700	-	-	Kn	7281.8	Au I	2	-	-	MI	7264.82	Ta	10	-	-	-
7300.72	Sm	40	-	-	Kn	7281.74	Ti I	10 h	-	-	-	7264.76	Zr I	5	-	-	-
7300.62	Sc I	3	-	-	-	7281.57	Eu	50 W	-	-	-	7264.70	Gd	5	-	-	Ed
7300.47	Fe	8 h	-	-	Me	7281.53	Mo	5	-	-	-	7264.29	V I	8	-	-	-
7300.30	I I	-	-	[50]	Db	7281.47	Sm II	25	-	-	Kn	7264.18	Yt II	15	20	-	-
7300.19	Mo	20	-	-	-	7281.349	He I	-	-	[30]	IMr	7264.17	Sm	8	-	-	-
7299.82	Rh I	2	-	-	Me	7281.29	Ti	8	-	-	-	7263.87	Re	8	-	-	Mo
7299.708	Ti I	50	-	-	Bh	7281.15	Sm	2	-	-	Kn	7263.68	La	3	-	-	Mo
7299.51	Se I	-	-	[200]	Rd	7281.04	S	-	-	[70]	Ms	7263.65	Gd	6	-	-	Ks
7299.00	F I	-	-	[25]	En	7280.9	Te I	-	-	[18]	Rd	7263.59	Sm	2	-	-	Kn
7298.64	Gd	8	-	-	Ed	7280.27	Ba I	1000	-	-	-	7263.58	Co I	6	-	-	-
7298.4	Sm	3	-	-	Kn	7279.997	Rb I	400	50	IRz	-	7263.5	Te I	-	-	[50]	Rd
7298.04	Sm	6	-	-	Kn	7279.949	Cs I	35 I	-	-	Ms	7263.43	Nd	2	-	-	Ed
7297.91	In II	-	-	[12]	Ps	7279.76	In	-	5	-	Sq	7263.40	Ti	15	-	-	-
7297.75	Ni I	4	-	-	-	7279.75	Xe II	-	-	[4 whs]	Hu	7262.83	La	3	-	-	Me
7297.57	Eu	30 W	-	-	-	7279.40	Gd	6	-	-	Ks	7262.80	Eu	200 W	-	-	-
7297.07	Ru	4	-	-	-	7279.25	Sm I	100	-	-	Kn	7262.69	Sm I	5	-	-	Kn
7297.0	bh Ti	3	-	-	L	7278.72	Hf II	-	6	-	Me	7262.67	Gd	80	-	-	Ks
7296.58	W	12	-	-	-	7278.43	Pd I	2	-	-	-	7262.62	Hf	3	-	-	Me
7296.32	Ta	40	-	-	-	7278.23	W	8	-	-	-	7262.62	Rh I	2	-	-	Me
7296.12	Sm	2	-	-	Kn	7277.67	Hf II	5	50	-	Me	7262.54	Xe I	-	-	[20]	Me
7295.48	Sm	3	-	-	Kn	7277.586	In II	-	-	[60]	Ps	7262.	Bi II	2	-	-	Cl
7295.01	Mo	4	-	-	-	7277.54	Ta	3	-	-	-	7261.93	Ni I	300	-	-	-
7294.98	Fe	5 h	-	-	-	7277.15	I	-	-	[15 h]	Bl	7261.86	Ti I	10	-	-	Rl
7294.76	Hg I	-	-	[20]	Su	7277.10	Sm	10	-	-	Kn	7261.54	Fe I	18 h	10 h	-	Bu
7294.51	Rn I	-	-	[4]	Rs	7276.96	Ta	30	-	-	-	7261.45	Sm II	10	-	-	Kn
7294.06	Gd	8	-	-	Ed	7276.76	Cb	6	-	-	Me	7260.49	Br	-	-	[50]	Ks
7293.4	bh Sc	2	-	-	Me	7276.47	Xe	-	-	[4 whs]	Hu	7259.3	N II	-	-	[15]	Fm
7293.20	Rh I	2	-	-	Me	7276.413	In II	-	-	[50]	Ps	7259.22	Pr	2	-	-	-
7293.08	Yt I	7	-	-	-	7275.6	bh Sc	10	-	-	Me	7259.	bh C	-	-	-	L
7293.068	Fe I	100	50 h	-	Bb	7275.57	Sc I	4 h	-	-	-	7258.99	U	2	-	-	Me
7293.00	In II	-	-	[12 h]	Ps	7275.455	In II	-	-	[40]	Ps	7258.90	Cb	10	2	-	Me
7292.67	Re	300	-	-	Me	7275.28	Si I	50	-	-	Ks	7258.74	Eu	100 W	-	-	-
7292.33	Hf II	3	3	-	Me	7275.	Sb II	-	35	-	Dv	7258.17	Zr I	3 h	-	-	-
7292.23	Gd	5	-	-	Ks	7274.81	Cb	8	2	-	Me	7257.94	Xe I	6	-	-	Me
7291.52	Sm	3	-	-	Kn	7274.49	W	3	-	-	-	7257.57	Sc I	6	-	-	-
7291.48	Ni I	100	-	-	-	7274.08	Gd	6	-	-	Ks	7257.11	Sm II	20	-	-	Kn
7291.35	Gd	60	-	-	-	7273.9	bh Ti	5	-	-	L	7256.65	Cl I	-	-	[200]	Ks
7291.00	Rn I	-	-	[40]	Rs	7273.88	Sm	30	-	-	Kn	7256.18	Cb	6	-	-	Me
7290.87	Ni I	20	-	-	-	7273.84	Re I	150	-	-	Me	7256.18	Sm	3	-	-	Kn
7290.8	bh Ti	5	-	-	L	7273.77	Ti I	15	-	-	-	7256.069	In II	-	-	[30]	Ps
7290.53	Rh I	2 h	-	-	Me	7273.73	U	2	-	-	-	7255.83	Cu II	-	-	20	Sh
7290.23	Sm	80	-	-	Kn	7273.61	Rh I	2	-	-	Me	7255.66	V I	2	-	-	-
7290.21	Si I	10	-	-	Ks	7273.54	Dy	2	-	-	-	7255.182	In II	-	-	[40]	Ps
7289.78	Kr II	-	-	[400 h]	Me	7273.33	Sm II	3	-	-	Kn	7254.95	Sm II	15	-	-	Kn
7289.25	Si I	200	-	-	Ks	7273.03	Rh I	6	-	-	-	7254.75	Gd	5	-	-	-
7289.14	Pr	2	-	-	-	7272.97	Kr II	-	-	[4]	Me	7254.649	Fe	10 h	8 wh	-	Bu
7288.98	Th	5 h	-	-	Fd	7272.96	Gd	5	-	-	Ed	7254.47	U	8	-	-	-
7288.92	Sm II	30	-	-	Kn	7272.936	A I	-	-	[100]	IMe	7254.17	Sm	4	-	-	Kn
7288.760	Fe I	30	20 h	-	Bb	7272.61	Tm	10	-	-	Me	7254.104	In II	-	-	[50]	Ps
7288.49	Br I	-	-	[10]	Ks	7272.33	Ba I	2 h	-	-	Me	7254.05	O I	-	-	[15]	Ps
7288.26	Dy	2	-	-	Ks	7272.29	Ta	5	-	-	-	7253.777	Ti I	7	-	-	Bh
7287.9	bh Sc	2	-	-	Me	7272.26	Nd	5	-	-	Ks	7253.49	Os	15	-	-	-
7287.71	Pr	2	-	-	-	7272.04	In II	-	-	[2 h]	Ps	7252.74	Ce	8	-	-	-
7287.41	Sr I	10 h	-	-	Me	7271.94	Rh I	80	-	-	-	7252.72	Gd	80	-	-	-
7287.36	Fe	-	-	6	Kn	7271.41	Ti I	7	-	-	-	7252.35	Cb	40	6	-	Me
7287.262	Kr I	-	-	[80]	Me	7271.32	Sm	8	-	-	Kn	7251.93	U	2	-	-	-
7287.05	Th	4	-	-	Fd	7270.97	Gd	5	-	-	Ed	7251.723	Ti I	125	-	-	Bh
7286.56	Ni I	10	-	-	-	7270.82	Rh I	200	-	-	-	7251.16	Os	10	-	-	-
7286.36	Ta	5	-	-	-	7270.70	Cs	15 s	-	-	Ms	7250.87	Xe I	-	-	[5 h]	Me
7286.30	Sm	2	-	-	Kn	7270.66	A I	-	-	[10]	Ms	7250.69	Si I	40	-	-	Ks
7285.80	W	10	-	-	-	7270.54	Sm II	5	-	-	Kn	7250.27	Ta	80	-	-	-
7285.71	Pr	2 h	-	-	-	7270.42	Gd	5	-	-	Ed	7250.12	Co I	80	-	-	-
7285.44	A I	-	-	[6]	Ms	7270.30	La I	5	-	-	Rl	7250.04	Dy	3	-	-	Ks
7285.40	Sm	2	-	-	Kn	7270.11	La I	15	-	-	-	7249.92	Xe I	-	-	[2]	Me
7285.301	Xe I	-	-	[60]	IMe	7269.24	Ti	5	-	-	-	7249.33	Ti	30	-	-	-
7285.286	Fe I	2 h	-	-	Bu	7269.2	Hg I	-	-	[15]	Su	7249.1	bh Cr	2	-	-	L
7285.28	Co I	200	-	-	-	7269.1	bh Ti	6	-	-	L	7249.06	S I	-	-	[25]	Ms
7284.95	Th	2	-	-	Fd	7268.90	Cb	6	1	-	Me	7249.02	Sm II	5 d	-	-	Kn
7284.853	Fe	15	15 h	-	Bu	7268.65	Cr	5	-	-	-	7248.99	Cs	-	-	2	-
7284.69	Zr I	3	-	-	-	7268.45	Sm II	3	-	-	Kn	7248.48	Zr I	3	-	-	-
7284.61	Sm II	5	-	-	Kn	7268.28	Kr I	-	-	[5]	Rs	7248.15	Eu	20 W	-	-	-
7284.38	Cd II	-	-	25	Vs	7268.18	Rh I	125	-	-	-	7247.82	Mn	40	-	-	Me
7284.34	Xe II	-	-	[50]	Hu	7268.11	Rn I	-	-	[200]	Rs	7247.23	Rn I	-	-	[10]	Re
7283.98	Zr	3 h	-	-	-	7267.62	Mo	40	-	-	-	7246.67	Re I	300	-	-	Me
7283.961	Xe I	-	-	[40]	IMe	7267.20	A I	-	-	[2]	Ms	7246.49	Gd	5	-	-	Ks
7283.815	Mn	400 h	-	-	-	7266.96	Ru	15	-	-	-	7245.85	Mo	60	-	-	-

7245.7—7183.0 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
7245.7	Hg	-	[5]	7246.08	In	5	Sq	7203.6	bh Ti	4	L
7245.60	Sm	-	-	7246.05	W	2	-	7203.17	Ca I	200	Me
7245.38	Xe II	-	[3]	7245.85	I	-	[10]	7202.55	A I	-	Ms
7245.23	W	2	-	7245.62	Sm	25	-	7202.37	F I	-	En
7245.167	Ne I	-	[1000]	7245.16	Ra I	-	[1000]	7202.194	Ca I	30	IWg
7244.94	Xe I	-	[20]	7245.13	Ni I	2	-	7202.17	Co	4	-
7244.86	Ti I	150	-	7244.72	Eu	150 W	-	7201.87	Ce	4	-
7244.86	Fe I	18	-	7244.56	Sm	5	-	7201.62	Zr I	10	-
7244.77	S I	-	[80]	7244.51	Fe II	-	12	7201.42	Gd	40	-
7244.73	Th	2	-	7244.43	Os	3	-	7200.79	Xe I	-	[15]
7244.58	Mo	4	-	7224.103	Kr I	-	[100]	7200.59	Kr I	-	[2 h]
7244.47	Yb	20	-	7223.87	Zr I	3	-	7200.18	W	8	-
7243.66	I I	-	[2]	7223.668	Fe I	20	-	7200.08	Th	3	-
7243.06	S I	-	[25]	7222.72	Yb	3	-	7199.00	Ir	5	-
7242.90	Pd I	2	-	7222.56	Gd	5	-	7198.7	Ga II	-	[60]
7242.50	Mo	80	-	7222.50	Sb	5 h	-	7198.62	W	4	-
7242.27	Gd	20	-	7222.39	Fe II	-	15 h	7198.41	Re	6	-
7242.09	Th	2	-	7222.048	In II	-	[20 h]	7197.7	bh Ti	8	-
7241.80	Cb	6	1	7221.6	bh Sc	3	-	7197.09	Gd	15	-
7241.70	Ce	5	-	7221.32	In	-	30	7197.03	Ni I	200	-
7241.56	Kr II	-	[2 hl]	7221.23	Fe I	10	8 h	7196.99	Er	4	-
7241.459	In II	-	[5]	7221.14	Sm I	4	-	7196.66	U	2	-
7240.90	Sm II	200	-	7220.79	Ni I	3 h	-	7196.40	Lu	5	-
7240.87	Hf	70	150	7220.07	Sm I	25	-	7196.24	Ta	3	-
7240.46	Mo	8	-	7219.90	La I	20	-	7195.93	Yt I	9	3
7240.35	Rh I	3	-	7219.70	Cs	15 s	-	7195.23	Ba I	200	-
7240.3	bh Sc	3	-	7219.686	Fe	12	18 h	7194.92	Fe	8 h	-
7239.885	Fe I	25	20 h	7219.4	bh Ti	6	-	7194.92	Cu II	-	15
7239.62	Mn	3	-	7219.34	Sm	3	-	7194.87	Gd	50	-
7238.92	Ru	200	-	7219.18	Th	2	-	7194.85	Eu I	700	-
7238.37	Ce	3	-	7219.06	Rh I	20	-	7194.7	Sb II	-	30
7238.20	Xe I	-	[3]	7218.62	Cr	4	-	7194.63	U	5	-
7238.17	Sm	3	-	7218.28	Sm	2	-	7194.48	Ru	4	-
7237.98	Lu	40	-	7218.11	Th	4	-	7193.9	Sm	2	-
7237.88	I I	-	[30]	7218.09	Sm II	50	-	7193.89	Si I	5	-
7237.28	Re	6	-	7218.04	U	4	-	7193.60	Co I	200 w	-
7237.10	Hf	100	200	7217.79	Th	3	-	7193.6	Pb II	-	[100]
7237.08	W	5	-	7217.60	Eu I	700	-	7193.56	Cu	10	-
7237.02	Sm II	15	-	7217.58	Pt	6	-	7193.56	Si I	8	-
7237.01	Cd	-	15	7217.36	Ce	5	-	7193.37	Zr I	3	-
7236.80	I I	-	[150]	7217.34	Co I	8	-	7193.23	Fe	-	8
7236.56	Nd	2	-	7217.16	La	2	-	7192.01	Nd	2	-
7236.20	Cr	3	-	7217.0	N II	-	[15]	7191.93	Gd	5	-
7236.19	C II	-	150 h	7216.94	Mo	8	-	7191.73	I I	-	[5]
7235.86	Si I	10	-	7216.31	W	6	-	7191.65	Yt I	20	5
7235.73	Sm II	8	-	7216.3	Ir	4	-	7191.63	Sm	3	-
7235.32	Si I	10	-	7216.20	Ti I	50	-	7191.40	Sn II	-	[40]
7234.72	Sm	5	-	7216.00	Sm	6	-	7191.37	Cb	15	2
7234.58	Kr	-	[2]	7215.97	Xe II	3	-	7191.37	W	2	-
7234.40	Sm	15 d	-	7215.08	Sm II	3	-	7191.35	Ta	15	-
7233.58	A II	-	[8]	7214.97	Ti I	10 h	-	7191.08	Te I	-	[35]
7233.45	Ta	10	-	7213.82	Sm I	60	-	7189.89	Ti I	30	-
7233.44	Ti I	10 h	-	7213.56	Ba I	10	-	7189.7	bh Sc	3	-
7233.44	Gd	80	-	7213.35	Ti I	7	-	7189.59	Gd	80	-
7233.31	Ti I	10 h	-	7213.32	Dy	2	-	7189.57	Sm	3	-
7233.2	bh Sc	3	-	7213.13	Kr II	-	[250]	7189.45	U	2	-
7232.47	Br I	-	[5]	7213.11	I I	-	[5]	7189.45	Nd	3	-
7232.27	Sr I	50 hl	-	7212.75	Th	4	-	7189.30	Hf II	1	3
7231.86	I	-	[20]	7212.48	Fe I	8 h	-	7189.17	Fe I	7	8 h
7231.49	Pr	4	-	7212.02	U	2	-	7188.55	Ti I	12	-
7231.46	Rn I	-	[4]	7210.95	Sm	40	-	7188.32	Cs	-	[2]
7231.12	C II	-	100	7210.29	U	4	-	7188.31	Se I	-	[15]
7230.88	Th	3	-	7210.04	Se I	-	[30]	7188.06	Cr	3	-
7230.4	bh Ti	4	-	7209.96	Os	8	-	7188.0	Eu	2 W	-
7230.3	Te I	-	[7]	7209.52	Be I	10	-	7187.86	Se I	-	[15]
7230.11	Dy	3	-	7209.44	Ti I	150	-	7187.62	U	2	-
7229.93	A I	-	[4]	7209.30	U	3	-	7187.341	Fe I	500	300
7229.216	In II	-	[30]	7209.14	Xe I	-	[5]	7187.12	Gd	5	-
7229.18	Gd	5	-	7208.94	Cb	20	3	7187.1	bh Cr	2	-
7229.11	Pb	50	-	7208.81	Pr	2	-	7187.1	Pb II	-	[10]
7229.01	Cs I	35 l	-	7208.75	Gd	5	-	7187.06	Yb	5	-
7228.91	Sm	15	-	7208.12	Ba I	20 h	-	7187.04	Rh	5	-
7228.81	Ba I	200 hl	-	7208.005	Th	12	-	7187.0	Eu	2 W	-
7228.69	Fe I	8 h	-	7207.87	Cr	15	-	7186.35	Sm	4	-
7228.526	Cs	500	[2]	7207.82	Ta	2 h	-	7185.52	Cr	5	-
7228.28	Mo	3	-	7207.71	Gd	5	-	7184.89	Si I	10	-
7228.05	Gd	40	-	7207.406	Fe I	300	300	7184.34	Br I	-	[30]
7228.03	Re I	40	-	7206.986	A I	-	[100]	7184.25	Mn	40	-
7227.89	U	2	-	7206.33	Os	15	-	7184.10	Os	10	-
7227.72	Rh	2	-	7205.99	Cs	-	[2]	7183.958	In II	-	[50]
7227.71	Pr	4	-	7205.45	U	2	-	7183.71	Ir I	40	-
7227.34	I	-	[10]	7205.12	Gd	8	-	7183.47	U	8	-
7227.34	Kr	-	[2]	7204.48	Eu	10	-	7183.450	In II	-	[40]
7227.15	Sm II	8	-	7204.28	Tb	4	-	7183.190	In II	-	[80]
7226.20	Si I	10	-	7204.09	Sm	20	-	7183.02	Ru	6	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
7183.0	bh Ti	10	-	L	7164.52	Hf II	1	5	Me	7147.50	Xe	-	[50 W	
7182.78	Mo	5	-	-	7164.469	Fe I	200	100 h	-	7147.36	Gd	50	-	-
7182.523	In II	-	[20]	Pa	7164.33	Gd	6	-	Ks	7147.041	A I	-	[30]	-
7182.22	Ru	5	-	-	7164.3	bh Ti	4	-	Ed	7147.0	Ge II	2	-	-
7182.08	V I	2	-	-	7163.52	Gd	8	-	-	7146.74	Ni	2	-	-
7182.048	In II	-	[40]	Pe	7163.50	Sb II	-	[4]	Lg	7146.57	I	-	[15]	-
7182.00	Ni I	200	-	-	7162.66	W	5	-	-	7146.25	Mo	4	-	-
7181.93	Fe I	8 h	-	Bu	7162.57	A I	-	[8]	Ms	7146.16	Gd	6	-	-
7181.878	In II	-	[40]	Pe	7162.14	Br	-	[45]	Ks	7146.13	Zr I	3	-	-
7181.7	Eu	4 W	-	Kn	7162.09	Zr I	3	-	-	7145.54	Os	30	-	-
7181.60	Sm	2	-	Kn	7161.43	S I	-	[10]	Fh	7145.48	Sb	-	[2]	-
7181.10	In	-	5	Sq	7161.25	La I	100	-	-	7145.317	Fe I	15 h	10 h	-
7180.88	Gd	8	-	Ed	7161.05	Zr I	5	-	-	7145.18	Er	4	-	-
7180.85	Sm	2	-	Kn	7160.88	Cs	-	[2]	Sv	7144.9	Ti II	-	[10]	-
7180.7	bh Sc	4	-	Me	7160.33	Ti I	10	-	Ks	7144.61	Te	-	[5]	-
7180.47	Kr	-	[3]	Me	7160.25	Gd	5	-	Ks	7144.47	Zr I	3 h	-	-
7180.35	Gd	8	-	Ed	7159.98	Th	2	-	Fd	7144.08	U	2	-	-
7180.01	Cb	8	1	Me	7159.87	Pr	4	-	-	7143.98	Sm II	30	-	-
7180.0	Eu	2	-	Kn	7159.75	Mo	3	-	-	7143.87	Zr	3	-	-
7179.72	Sm	10	-	-	7159.43	Cb	100	15	Me	7143.81	Xe	-	[8 W	-
7179.56	U	2	-	-	7159.18	Co I	250	-	-	7143.45	Kr I	-	[8]	-
7179.53	Zr	3	-	-	7159.10	Th	10	-	Fd	7143.39	Zr I	3	-	-
7178.84	Se I	-	[30]	Rd	7159.0	bh Ti	6	-	L	7143.10	Lu	5	-	-
7178.80	Gd	6	-	Ks	7158.83	A I	-	[30]	Ms	7142.79	Lu	7	-	-
7178.27	Cb	12	2	Me	7158.7	Pb II	-	[10]	Ea	7142.55	Rh I	5	-	-
7177.9	Hg I	-	[3]	Su	7158.56	Th	5	-	Fd	7142.522	Fe I	12 h	8 h	-
7177.26	Zr	3	-	Ks	7158.28	Gd	20	-	-	7142.28	Br I	-	[40]	-
7176.886	Fe I	10 h	-	Bu	7158.07	Mn	6 h	-	Si	7142.25	U	2	-	-
7176.34	A I	-	[4]	Ms	7158.05	La I	125	-	-	7142.09	I	1	[100]	-
7176.03	Gd	8	-	Ed	7157.86	Os	3 h	-	-	7142.09	Sm I	10	-	-
7175.96	Hg I	-	[15]	Su	7157.83	Zr I	8 h	-	-	7141.72	Ru	9	-	-
7175.937	Fe I	8 h	-	Bu	7157.39	Ni	2 h	-	Si	7141.62	Ni I	2	-	-
7175.77	Ta	2	-	-	7157.360	O I	-	[70]	Fh	7141.47	Ce	3	-	-
7175.50	Eu	200 W	-	Kn	7157.33	Sm	3	-	Kn	7141.25	U	2	-	-
7175.16	Dy	3	-	Ks	7156.99	Ce	5	-	-	7141.21	Ra I	-	[2000]	-
7175.14	Yb	10	-	Me	7156.98	Th	2	-	Fd	7141.2	bh Sc	5	-	-
7174.91	Ta	10	-	-	7156.82	Au	2	-	Wt	7141.17	Gd	6	-	-
7174.9	Eu	10 W	-	Kn	7156.51	Dy	2	-	Ks	7141.13	Sm I	25	-	-
7174.46	Mn	3	-	Si	7156.19	Sm	4	-	Kn	7140.74	Zr I	3	-	-
7174.0	Sm	2	-	Kn	7155.86	U	2	-	-	7140.54	W	8	-	-
7173.939	Ne I	-	[1000]	IMe	7155.64	Fe I	10 h	-	Bu	7139.99	Kr II	-	[60]	-
7173.73	Ni I	2	-	-	7155.55	Th	10	-	Fd	7139.8	N II	-	[30]	-
7173.45	Gd	5	-	-	7155.31	Eu	2	-	-	7139.79	S II	-	[10]	-
7173.42	Th	3	-	Fd	7155.05	Th	6 h	-	Fd	7139.76	Gd	5	-	-
7172.90	Ta	150	-	-	7154.83	Sm I	25	-	Kn	7139.64	Re	2	-	-
7172.70	Xe I	-	[10]	Me	7154.71	Co I	200	-	-	7139.6	Eu	5	-	-
7172.67	Sm I	20	-	Kn	7154.29	Cu I	3 h	-	Me	7139.39	Sm	10	-	-
7172.29	Gd	50	-	-	7154.19	Ru	15	-	-	7138.99	I II	-	[70 h]	-
7172.24	Sm	2	-	Kn	7154.10	Mo	3	-	-	7138.91	Ti I	15	-	-
7172.21	Re	10	-	Me	7153.58	Ba I	80 hl	-	-	7138.91	Se II	-	[20]	-
7172.10	U	2	-	-	7153.16	Gd	20	-	Ks	7138.81	Al II	-	[2]	-
7171.92	In	-	12	Sq	7153.09	Sr I	15	-	-	7138.77	Ir I	6	-	-
7171.78	Mo	2	-	-	7152.80	Sm	3	-	Kn	7138.70	Ne	-	[30]	-
7171.531	Ti	10	-	Bh	7152.21	Kr I	-	[5]	Me	7138.28	Zr I	3	-	-
7171.2	bh Ti	5	-	L	7151.82	Rn I	-	[6]	Ra	7138.14	Sc I	6	-	-
7170.63	Cr	5	-	Me	7151.69	Ce	3	-	-	7137.99	Sm	10	-	-
7170.58	Sm	3	-	Kn	7151.495	Fe I	8 h	-	Bu	7137.58	Sm	15	-	-
7170.14	Ni I	5	-	-	7151.36	V I	2	-	Me	7136.57	Xe I	-	[15]	-
7169.13	Sc I	8	-	Me	7151.28	Mn	30 h	-	Si	7136.42	Sm	30	-	-
7169.09	Zr I	150	-	-	7151.03	Sm I	2	-	Kn	7136.01	Sm	50	-	-
7168.888	Th	15	-	Fd	7151.03	Nd	2	-	-	7135.72	Gd	15	-	-
7168.87	I I	-	[15]	Bi	7150.93	Ni	5 h	-	-	7135.69	Er	6	-	-
7168.41	Gd	500	-	-	7150.84	Gd	5	-	-	7135.34	Te	-	[30]	-
7167.86	In	-	5	Sq	7150.34	Th	2	-	Fd	7135.22	Ta	2	-	-
7167.77	Ru	4	-	-	7150.21	Ce	3	-	-	7135.19	Ru I	6	-	-
7167.76	S I	-	[15]	Fh	7149.84	Gd	8	-	Ed	7134.99	Fe	-	5	-
7167.47	Si I	3 h	-	Ks	7149.78	La I	5	-	-	7134.66	Al II	-	[2]	-
7167.24	Sr I	100 hl	-	-	7149.60	Sm II	150	-	Kn	7134.32	Co I	200	-	-
7167.133	Ti	15	-	Bh	7149.554	Cs	-	[10]	Sv	7134.08	Mo	40	-	-
7167.01	Ni I	35	-	-	7149.42	Mo	3	-	-	7133.27	Xe II	-	[10]	-
7166.74	S I	-	[3]	Ms	7149.11	Pd I	6	-	Me	7133.24	Ba	4 h	-	-
7166.61	Gd	5	-	Ks	7149.03	Xe II	-	[150]	Hu	7133.16	Gd	6	-	-
7166.47	I I	-	[30]	Db	7148.93	W	6	-	-	7132.989	Fe	15	10 h	-
7166.15	Rh I	2 h	-	-	7148.91	Os	15	-	-	7132.95	Zr I	3	-	-
7165.94	Lu	9	-	Me	7148.8	Sm I	2	-	Kn	7132.27	Cd I	30	-	-
7165.82	Cb	6	1	Me	7148.76	Eu	3	-	Kn	7131.81	Hf	150	250	-
7165.62	Si I	100 h	-	Ks	7148.63	L I	-	[30]	Ev	7131.80	Sm I	80	-	-
7165.12	S I	-	[15]	Fh	7148.63	Ta	150	-	-	7131.68	Pt I	5	-	-
7165.1	Pb II	-	[10]	Ea	7148.59	Th	4	-	Fd	7131.3	bh Ti	5	-	-
7164.88	Th	8	-	Fd	7148.20	Gd	8	-	-	7130.942	Fe I	100	80 h	-
7164.83	Xe II	-	[300]	Hu	7148.147	Ca I	500	-	IWg	7130.61	Sc	3 h	-	-
7164.82	I	-	[30]	Ev	7148.139	Co	2	-	-	7130.6	bh Sc	4	-	-
7164.75	Si I	2 h	-	Ks	7148.12	Ba	2	-	-	7130.532	Cs	-	[5]	-
7164.67	Eu	50 W	-	Kn	7147.89	U	5	-	-	7130.09	U	6	-	-
7164.56	S I	-	[10]	Ms	7147.70	Sm	3	-	Kn	7130.06	Cb	15	2	-

7129.8—7073.6 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
7129.80	Gd	6	-	-	Ks	7113.56	Co I	150 I	-	-	-	7094.40	Hf	3	15	-	Me
7129.79	Sm	4	-	-	Kn	7113.53	Br I	-	-	[10]	-	7093.2	bh Ti	4	-	-	L
7129.40	Eu	4	-	-	Kn	7113.52	Zr I	5	-	-	-	7093.02	Ta	20	-	-	-
7129.38	Nd	2	-	-	-	7113.15	Gd	15	-	-	Ed	7092.98	Sm	5	-	-	Kn
7129.25	Re	10	-	-	-	7112.82	Zr I	8	-	-	-	7092.80	Zr I	3	-	-	-
7128.91	U	20	-	-	-	7112.72	Sm II	3	-	-	Kn	7092.40	La I	2	-	-	Rl
7128.8	Yb	2	-	-	It	7112.72	Ni	2	-	-	Si	7092.16	Ta	2	-	-	-
7128.74	Sm	3	-	-	Kn	7112.36	C II	-	5	-	Fl	7092.14	V I	2	-	-	-
7128.34	Ir I	4	-	-	-	7112.34	Sm	5 h	-	-	Kn	7091.99	Hg I	-	[100]	-	Su
7128.14	Kr	-	-	[2 hl]	Me	7112.2	Ne I	-	-	[10]	Ps	7091.90	Sm II	3	-	-	Kn
7128.13	Gd	8	-	-	Ed	7112.02	Gd	8	-	-	Ed	7091.36	Ta	2	-	-	-
7127.989	F I	-	-	[150]	Di	7111.68	Zr I	40	-	-	-	7091.32	U	2	-	-	-
7127.92	Yt I	12	3	-	Me	7111.63	Br I	-	-	[30]	Ks	7091.31	Zr	5 h	-	-	-
7127.444	Ba	2	-	-	Bu	7111.44	Sm	5	-	-	Kn	7091.27	Cb	6	1	-	Me
7127.37	Sm	4	-	-	Kn	7110.91	Ni I	100	-	-	-	7091.22	Sm I	60	-	-	-
7127.2	bh Zr	2	-	-	L	7110.9	Hg	-	-	[10]	Lf	7091.	bh C	-	-	-	L
7126.83	Ru	15	-	-	-	7110.59	Ru	5	-	-	Kn	7090.404	Fe I	50	25 h	-	Bb
7126.80	Gd	8	-	-	Ed	7110.56	Sm I	5	-	-	-	7090.00	Ba I	100 hl	-	-	-
7126.71	Ni I	3	-	-	-	7109.87	Mo	80	-	-	-	7089.94	Sm	2	-	-	Kn
7126.60	Ba	10 h	-	-	Me	7109.8	bh Zr	2	-	-	L	7089.48	Kr I	-	[2]	-	Rs
7126.29	Hg I	-	-	[10]	Su	7109.24	Dy	5	-	-	-	7089.43	Zr I	5	-	-	-
7126.19	U	2	-	-	-	7109.15	U	3	-	-	-	7088.78	Mo	5 h	-	-	Ks
7126.17	Cb	35	8	-	Me	7109.06	Sm I	3	-	-	Kn	7088.30	Sm I	60	-	-	-
7125.84	Lu	125	-	-	Me	7109.01	Eu	3	-	-	Kn	7088.00	I I	-	[100]	-	Db
7125.80	A I	-	-	[30]	Ms	7108.8	Re	2	-	-	Me	7087.9	bh Ti	12	-	-	L
7125.72	Ta	80	-	-	-	7108.36	Sm	5	-	-	Kn	7087.69	I	-	[15]	-	Bl
7125.6	bh Ti	15	-	-	L	7108.05	Ta	3	-	-	-	7087.35	Ru	40	-	-	-
7125.30	Re	8	-	-	Me	7107.66	I	-	-	[15]	Bl	7087.30	Zr I	25	-	-	-
7125.11	Sm II	30	-	-	Kn	7107.496	A I	-	-	[200]	Ms	7086.83	Cl I	-	[10]	-	Ks
7124.9	bh Ti	4	-	-	L	7107.461	Fe I	5	-	8 wh	Bb	7086.76	Fe I	7 h	-	-	Bu
7124.66	Cu I	3 h	-	-	Me	7106.72	Sm	15	-	-	Kn	7086.70	A I	-	[15]	-	Ms
7124.61	Th	6	-	-	Fd	7106.48	Eu	600 W	-	-	-	7086.38	Ce	5	-	-	-
7124.47	Co I	50	-	-	-	7106.24	Sm I	80	-	-	-	7086.06	Ru	40	-	-	-
7124.32	Mo	5	-	-	Ks	7105.66	Gd	15	-	-	Ed	7085.72	Ce	-	[2]	-	Sv
7123.29	Sm II	5	-	-	Kn	7105.59	Mo	4	-	-	Ks	7085.54	Sm II	30	-	-	-
7123.19	Sm	4	-	-	Kn	7104.86	Os	3	-	-	-	7085.52	Gd	20	-	-	Ks
7122.95	Cb	8	2	-	Me	7104.7	La II	50	2	-	Me	7085.40	Ta	30	-	-	-
7122.65	Mo	8	-	-	Ks	7104.57	Sm I	150	-	-	-	7085.22	I	-	[150]	-	Bl
7122.59	Gd	50	-	-	-	7104.45	Rh I	80	-	-	-	7084.99	Co I	500 W	-	-	-
7122.40	Sm II	15	-	-	Kn	7103.72	Zr I	50	-	-	-	7084.53	Tb	4	-	-	Ed
7122.25	Co	50	-	-	-	7103.61	Sm	5	-	-	Kn	7084.33	Si I	2 h	-	-	Ks
7122.24	Ni I	1000 W	-	-	-	7103.43	Te	-	-	[15]	Bl	7084.03	Se	-	[15]	-	Ms
7122.09	I	-	-	[60]	Ev	7103.43	Eu	8 W	-	-	Kn	7083.396	Fe I	5 h	-	-	Bu
7121.27	Ta	30	-	-	-	7103.01	Mn	5 h	-	-	Si	7082.98	Sm	2	-	-	Kn
7121.18	Cs	-	-	[2]	Sv	7102.91	Zr I	80	-	-	-	7082.51	Sm	10	-	-	Kn
7120.93	Dy	3	-	-	Ks	7102.65	I I	-	-	[50]	Db	7082.4	bh Sc	5	-	-	Me
7120.5	bh Sc	4	-	-	Me	7102.65	Mo	8	-	-	Ks	7082.37	Sm II	400 h	-	-	-
7120.43	Sc	2 h	-	-	Me	7102.58	V I	2	-	-	-	7082.22	Ni I	2	-	-	Me
7120.31	Ba I	800 hl	-	-	-	7102.55	Co	25	-	-	-	7082.15	Xe II	-	[100]	-	Hu
7120.2	bh Sc	3	-	-	Me	7102.01	Cb	30	8	-	Me	7082.11	U	10	-	-	-
7120.11	I	-	-	[20]	Ev	7102.00	Sm II	10	-	-	Kn	7081.88	Hg I	-	[125]	-	Su
7120.0	Eu	3	-	-	Kn	7101.95	Ni	3	-	-	-	7081.30	Ta	50	-	-	-
7119.92	Hg	-	-	[5]	Su	7101.70	Dy	2	-	-	Ks	7081.22	Mo	12	-	-	Ks
7119.81	Sm	60	-	-	Kn	7101.69	I	-	-	[30]	Bl	7080.34	I I	-	[30]	-	Bl
7119.598	Xe I	-	-	[500]	Ime	7101.64	Rh I	60	-	-	-	7080.02	Pr	3	-	-	-
7119.52	Hf	15	50	-	Me	7101.63	U	12	-	-	-	7079.81	Se II	-	[15 h]	-	Bt
7119.45	C II	-	15	-	Fl	7101.46	Sm I	10	-	-	Kn	7079.76	Sm	4	-	-	Kn
7119.31	Cb	15	3	-	Me	7101.23	Er	4	-	-	Ed	7079.74	La II	-	2	-	Me
7118.91	Gd	40	-	-	-	7101.09	Ir	6	-	-	-	7079.6	bh Zr	3	-	-	L
7118.50	Ra I	-	-	[1000]	Rs	7100.8	Xe II	-	-	[5 h]	Hu	7079.48	Sm I	25	-	-	Kn
7118.5	C I	20 h	-	-	En	7100.77	Sm	3	-	-	Kn	7079.20	Co I	10	-	-	-
7118.25	Sm I	25	-	-	Kn	7100.71	Gd	5	-	-	-	7078.77	Gd	8	-	-	Ed
7118.09	Ta	2	-	-	-	7100.54	Hf	3	15	-	Me	7078.44	Kr II	-	[3]	-	Me
7117.91	Co I	2	-	-	Me	7100.16	I I	-	-	[15]	Db	7078.08	Pt	3	-	-	-
7117.52	Ta	6	-	-	-	7099.78	Pb	10	-	-	Wt	7078.02	Ra II	-	[70]	-	Rs
7117.51	Sm	25	-	-	Kn	7099.54	Pr	2	-	-	-	7077.09	Eu	800	-	-	-
7116.8	La II	-	2	-	Me	7098.94	Cb	60	10	-	Me	7077.03	A II	-	[2]	-	Rt
7116.76	Gd	8	-	-	-	7098.75	Gd	5	-	-	-	7076.39	La	3	-	-	-
7116.45	Te	-	-	[15]	Bl	7098.22	W	2	-	-	-	7076.33	U	2	-	-	-
7116.30	Te	-	-	[15]	Bl	7098.18	Mo	5	-	-	Ks	7075.94	Gd	6	-	-	Ks
7116.07	Ta	4	-	-	-	7098.17	La	3	-	-	-	7075.23	Cb	10	2	-	Me
7116.07	U	2	-	-	-	7098.10	Gd	8	-	-	-	7075.15	Dy	5	-	-	Ks
7115.96	Sm I	50	-	-	Kn	7097.70	Zr I	100	-	-	-	7075.13	Yt I	3	2	-	-
7115.84	Pd I	3	-	-	Me	7097.57	Te	-	-	[5]	Bl	7075.11	Sb	-	[4]	-	Lg
7115.65	Hf	-	3	-	Me	7096.37	Sm I	60	-	-	-	7074.81	U	25	-	-	-
7115.49	Gd	8	-	-	Ed	7096.34	Lu	30	-	-	Me	7074.68	Ta	3	-	-	-
7115.30	Sm	3	-	-	Kn	7095.68	U	2	-	-	-	7074.67	Sm	50	-	-	Kn
7115.13	C II	-	15	-	Fl	7095.59	Zr I	12	-	-	-	7074.63	Se II	-	[15 h]	-	Bt
7115.01	Gd	8	-	-	Ed	7095.51	Sm I	100	-	-	-	7074.60	Gd	5	-	-	Ks
7114.9	Eu	4	-	-	Kn	7095.425	Fe I	8 h	-	-	Bb	7074.56	Eu	60	-	-	-
7114.7	Pb II	-	-	[2]	Ea	7095.40	Ni I	15	-	-	-	7074.41	Sm	15	-	-	Kn
7114.55	Pr	5	-	-	-	7094.78	Pt I	10	-	-	-	7073.97	Kr II	-	[60]	-	Me
7114.50	Sm I	5	-	-	Kn	7094.56	Zr I	10	-	-	-	7073.9	Tl II	-	[20]	-	El
7114.47	Eu	4	-	-	Kn	7094.53	Co I	40	-	-	-	7073.63	Gd	20	-	-	-
7113.73	Pt I	80	-	-	-	7094.4	bh Sc	5	-	-	Me	7073.61	U	6	-	-	-

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities			
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
7072.43	Xe	-	-	[4 wh]	Hu	7054.86	Os	8	-	-	-	7035.13	Hf	3	10	-	-
7072.4	bh Sc	5	-	-	Me	7054.61	Gd	25	-	-	-	7034.96	Sr I	50 h	-	-	Ke
7072.053	Ti	25	-	-	Bh	7054.5	bh Ti	8	-	-	L	7034.80	Xe	-	[3]	-	Me
7071.88	Fe I	4	-	-	Bu	7054.28	Yt I	6	3	-	Me	7034.67	Sm II	3	-	-	Kn
7071.3	bh Zr	4	-	-	L	7054.04	Co I	200 W	-	-	-	7034.42	Ni I	30	-	-	-
7071.10	Sm I	10	-	-	Kn	7053.92	Sm	2	-	-	Kn	7034.4	bh V	3	-	-	L
7071.00	Gd	20	-	-	-	7053.54	Sm I	5	-	-	Kn	7034.31	Os	4	-	-	-
7070.8	Ti II	-	[10]	-	El	7053.069	Ti	15	-	-	Bh	7033.84	U	5	-	-	-
7070.41	Co I	20	-	-	-	7052.94	Yt I	4	6	-	-	7033.7	Pd	-	2	-	It
7070.10	Sr I	1000	-	-	-	7052.9	C II	-	5 h	-	Fl	7033.47	Sm	4	-	-	Kn
7069.93	Gd	10	-	-	-	7052.89	Co I	300 W	-	-	-	7033.39	Gd	8	-	-	Ed
7069.84	Mn	60	-	-	Sl	7052.62	Hf	-	3	-	Me	7033.2	bh Zr	5	-	-	L
7069.43	Ba I	3	-	-	Me	7052.57	Xe	-	[3 wh]	-	Hu	7033.	Bi II	-	25	-	Cf
7069.32	Sm	2	-	-	Kn	7052.5	Eu	2	-	-	Kn	7032.99	I II	-	[70]	-	Ke
7069.11	Ti I	15	-	-	Me	7052.04	Pd I	2	-	-	Me	7032.91	Yb	2	-	-	Me
7068.73	A I	-	[30]	-	Ms	7051.52	Sm II	400 hd	-	-	-	7032.52	Co I	25	-	-	-
7068.415	Fe I	40	30	-	Bb	7051.292	Ne I	-	[70]	-	IMe	7032.4127	Ne I	-	[1000]	-	S
7068.36	La I	100	-	-	-	7051.26	Sb	-	[8]	-	Lg	7032.31	Sm	2	-	-	Kn
7068.33	Ni I	2	-	-	-	7051.20	Cb	15	2	-	Me	7032.28	Mo	3 h	-	-	-
7068.08	Gd	25	-	-	-	7051.06	Pr	3	-	-	-	7032.04	Yb	3	-	-	Me
7067.50	Ni I	2	-	-	-	7051.06	Xe I	-	[3]	-	Me	7032.03	La I	40	-	-	-
7067.44	Fe	-	10 h	-	Kn	7050.95	Gd	25	-	-	-	7031.51	Ta	8	-	-	-
7067.38	Sm	15	-	-	Kn	7050.7	Pb II	-	[40]	-	Ea	7031.24	Lu	50	-	-	Me
7067.24	I	-	[15]	-	Bl	7050.65	Ti I	40	-	-	-	7031.04	Ce	5	-	-	-
7067.217	A I	-	[400]	-	IMe	7050.1	Ge II	-	2	-	Lg	7030.69	U	3	-	-	-
7066.89	Nd	2	-	-	Ks	7049.86	Ta	3	-	-	-	7030.33	Hf II	30	150	-	Me
7066.46	Re I	10	-	-	Me	7049.70	Ce	3	-	-	-	7030.262	A I	-	[100]	-	IMe
7066.41	Cb	8	2	-	Me	7049.68	Te	-	[5]	-	Bl	7030.09	Pt	3	-	-	-
7066.21	La II	400	150	-	-	7049.68	Ni I	2	-	-	-	7030.06	Ni I	100	-	-	-
7065.86	Gd	5	-	-	Ks	7049.4	bh Sc	5	-	-	Me	7029.20	Os	3	-	-	-
7065.84	Sm II	6 d	-	-	Kn	7049.38	Sc	2 h	-	-	Me	7028.79	Ni I	5	-	-	Me
7065.705	He I	-	[10]	-	-	7049.15	Sm	10	-	-	Kn	7028.68	W	2	-	-	-
7065.60	Pt	10	-	-	-	7047.82	Sm	2	-	-	Kn	7028.50	Re	8	-	-	Me
7065.188	He I	-	[70]	-	IMr	7047.37	Xe I	-	[30]	-	Me	7027.98	Ru I	250	-	-	-
7065.02	Sm	10	-	-	Kn	7047.04	U	2	-	-	-	7027.81	Co I	200 W	-	-	-
7064.79	Sm II	4	-	-	Kn	7046.98	Sm	2	-	-	Kn	7027.70	I	-	[15]	-	Bl
7064.48	Th	3	-	-	Fd	7046.81	Cb	200	40	-	Me	7027.40	Zr I	30	-	-	Ke
7063.83	Hf	40	100	-	Me	7046.44	Sm	3	-	-	Kn	7027.14	Re	2	-	-	Me
7063.79	Se I	-	[70]	-	Ms	7045.96	La I	125	-	-	-	7026.64	Sm I	100	-	-	-
7063.62	Al II	-	[15]	-	Sy	7045.29	Mo	6	-	-	Ks	7026.61	Si	2 h	-	-	Ke
7063.60	I I	-	[50]	-	Ev	7045.12	U	2	-	-	-	7026.31	U	2	-	-	-
7063.57	Ni I	10	-	-	-	7045.02	Gd	8	-	-	Ks	7026.15	Cb	15	8	-	Me
7063.4	C II	-	5 h	-	Fl	7044.54	Hg I	-	[10]	-	Su	7026.07	V I	3	-	-	-
7063.34	Mo	12	-	-	Ks	7043.79	Yb	8	-	-	Me	7025.81	Mn	2	-	-	Sl
7062.97	Ni I	35	-	-	-	7043.75	Gd	8	-	-	Ed	7025.7	bh Sc	5	-	-	Me
7062.87	Hf	3	15	-	Me	7043.27	Gd	5	-	-	Ks	7025.32	Mo	12	-	-	Ke
7062.33	Dy	2	-	-	Ks	7043.1	bh Zr	4	-	-	L	7025.03	Ta	80	-	-	-
7062.25	Sm	2	-	-	Kn	7042.58	Co I	5 h	-	-	-	7024.86	Ni I	50	-	-	-
7062.06	Se I	-	[1000]	-	Rd	7042.54	Pr	3	-	-	-	7024.649	Fe I	15	8 wh	-	Bu
7061.90	Hf	10	30	-	Me	7042.450	Rb II	-	150	-	Rr	7024.59	Pr	2	-	-	-
7061.74	Ce	8	-	-	-	7042.24	I	-	[70 h]	-	Bl	7024.59	Nd	2	-	-	-
7061.20	Ru I	25	-	-	-	7042.23	Sm II	400 h	-	-	-	7024.48	Gd	8	-	-	Ed
7060.75	Zr I	5 h	-	-	-	7042.06	Al II	-	[25]	-	Sy	7024.44	Sm	2	-	-	Kn
7060.71	Th	3	-	-	Fd	7041.77	Sm	2	-	-	Kn	7024.13	Re I	125	-	-	-
7060.67	Os	15	-	-	-	7040.92	S	-	[70]	-	Ms	7024.084	Fe	5	-	-	Bu
7060.37	Ru	20	-	-	-	7040.18	Eu	800	-	-	-	7024.051	Ne I	-	[500]	-	IMe
7060.29	Pd I	5	-	-	Me	7039.37	Cu I	15	-	-	-	7023.76	Ni	10	-	-	-
7060.21	Mo	25	-	-	-	7039.36	Ti I	15	-	-	-	7023.75	Sm	5	-	-	Kn
7060.02	Sm II	3	-	-	Kn	7039.22	Sm II	500 h	-	-	-	7023.67	La I	100 h	-	-	-
7060.0	bh Ti	3	-	-	L	7039.07	Ta	40	-	-	-	7023.48	Cb	30	8	-	Me
7059.98	Re	4	-	-	Me	7038.95	Te	-	[70]	-	Bl	7023.28	Au	2 h	-	-	Wt
7059.96	Ba I	2000	-	-	-	7038.80	Ti I	100	-	-	-	7023.003	Fe I	40	30 h	-	Bu
7059.37	Sm	2	-	-	Kn	7038.76	Rh I	5	-	-	-	7022.99	Nd	2	-	-	Ed
7059.109	Ne I	-	[200]	-	IMe	7038.73	Gd	5	-	-	Ks	7022.75	Cu II	-	2	-	Sh
7058.6	Te I	-	[7]	-	Rd	7038.251	Fe I	7	20 h	-	Bb	7022.68	Sm	5	-	-	Kn
7058.40	Br I	-	[20]	-	Ks	7038.04	Cb	15	2	-	Me	7022.56	Kr II	-	[2 h]	-	Me
7058.4	Eu	3 W	-	-	Kn	7037.98	Mo	25	-	-	-	7022.37	Ni	4	-	-	-
7058.23	Re	8	-	-	Me	7037.9	Sm	2	-	-	Kn	7022.02	Gd	8	-	-	Ed
7058.00	Gd	15	-	-	-	7037.87	Ir	15	-	-	-	7021.64	I II	-	[10]	-	Ke
7057.96	Zr	5	-	-	-	7037.86	Gd	6	-	-	Ks	7021.54	Pr	6	-	-	-
7057.36	Zr I	8	-	-	-	7037.58	Pd I	3	-	-	Me	7021.23	Hf II	3	30	-	Me
7057.28	Sm	2	-	-	Kn	7037.45	F I	-	[200]	-	En	7020.92	Nd	4	-	-	Ke
7057.27	I I	-	[5]	-	Bl	7037.37	Nd	3	-	-	-	7020.71	U	6	-	-	-
7057.27	Kr I	-	[10]	-	Me	7037.37	Ni I	4	-	-	-	7020.41	Sm II	500	-	-	-
7057.0	Sm	2	-	-	Kn	7037.25	Gd	50	-	-	-	7020.16	Yb	5	-	-	Me
7056.56	Al II	-	[20]	-	Sy	7036.73	Sm	25	-	-	Kn	7019.61	Mo	3 h	-	-	Ke
7056.55	Sm	25	-	-	Kn	7036.60	Ta	2	-	-	-	7019.25	Hf	-	10	-	Me
7056.30	Pt	2	-	-	-	7036.30	Th	4	-	-	Fd	7019.22	Gd	8	-	-	Ed
7055.95	Dy	5	-	-	Ks	7036.15	Bi I	5	-	-	-	7019.02	Xe I	-	[30]	-	Me
7055.88	Co I	25	-	-	-	7036.0	Yb	2	-	-	It	7018.94	I II	-	[50]	-	Ke
7055.67	Gd	8	-	-	Ed	7036.0	Eu	3 W	-	-	Kn	7018.93	Sm	2	-	-	Kn
7055.65	Mn	5	-	-	Sl	7035.86	Ti I	20 W	-	-	-	7018.88	Ce	6 d	-	-	-
7055.42	Rn I	-	[400]	-	Ra	7035.8	bh Sc	6	-	-	Me	7018.574	Th	3	-	-	Fd
7055.01	A II	-	[4]	-	Rt	7035.53	Xe I	-	[20]	-	Me	7018.43	Mo	8	-	-	-
7054.97	Sm II	15	-	-	Kn	7035.19	Yt I	12	6	-	-	7018.32	I	-	[50]	-	Ev

7018.0—6968.4 A.

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities			
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
7018.04	Sm	2	-	-	Kn	7001.58	Rh I	20	-	-	-	6983.51	Gd	5	-	-	-
7017.98	Si I	4 h	-	-	Ks	7001.57	Ni I	30	-	-	-	6983.488	Cs I	25	-	-	Ma
7017.91	W	3	-	-	-	7001.55	Sm	2	-	-	Kn	6983.3	Eu	2	-	-	Kn
7017.68	Si I	10 h	-	-	Ks	7001.44	Er	6	-	-	Ed	6983.23	Ti I	12	-	-	Ri
7017.68	Gd	6	-	-	Ks	7000.795	Th	8	-	-	Fd	6982.9	bh Ca	3	-	-	L
7017.43	Dy	5	-	-	Ks	7000.79	Kr I	-	[7]	Me	6982.47	Dy	2	-	-	Ks	
7017.27	Ce	4	-	-	-	7000.76	Sm	2	-	-	Kn	6982.4	Eu	2	-	-	Kn
7017.06	Xe II	-	[40]	-	Hu	7000.74	Gd	20	-	-	-	6982.05	Xe I	-	[30]	-	Me
7016.99	Hf II	-	6	-	Me	7000.633	Fe	3 h	-	-	Bu	6982.01	Ru	200	-	-	-
7016.72	Sm	4	-	-	Kn	7000.21	Ta	10 s	-	-	-	6982.00	Yb	3	2	-	Me
7016.61	Co I	300 W	-	-	-	7000.05	Cu I	3 h	-	-	-	6981.90	Cl I	-	-	[5]	Ks
7016.44	Mo	10	-	-	-	7000.0	Ga II	-	[2]	Sy	6981.60	Hf	5	10	-	Me	
7016.44	Pd I	10	-	-	Me	6999.96	Ce	10	-	-	6981.40	S	-	-	[50]	Bl	
7016.436	Fe I	100	25 h	-	Bu	6999.902	Fe I	25	-	-	Bb	6981.2	Pd	-	2	-	It
7015.89	Te	-	[50]	-	Bl	6999.88	Mo	5	-	-	-	6981.1	Yb	4	-	-	It
7015.72	U	5	-	-	-	6999.87	Yb	15	3	Me	6981.04	Cr	8	-	-	-	
7015.36	Sm	3	-	-	Kn	6999.13	Mo	8	-	-	6981.0	Be I	15	-	-	Ps	
7015.3	N II	-	[5]	-	Fm	6998.90	Rn I	-	[20]	Rs	6980.91	Hf II	100	200	-	Me	
7015.18	Co I	5	-	-	-	6998.84	Ir I	15	-	-	6980.85	Gd	25	-	-	Ks	
7015.07	Eu	4	-	-	Kn	6998.10	Dy	3	-	-	6980.81	Cr I	5	-	-	Me	
7014.90	Cb	6	1	Me	6997.83	Hf II	2	20	Me	6980.6	bh Sc	5	-	-	Me		
7014.13	U	2	-	-	-	6997.22	Co I	200 w	-	-	6980.39	Ti I	12	-	-	Ri	
7013.97	Mo	5	-	-	-	6996.95	Sm	3	-	Kn	6980.37	Mo	10	-	-	-	
7013.94	Ta	2	-	-	-	6996.78	Gd	200	-	-	6980.22	Ra I	-	[1000]	-	Rs	
7013.85	Se I	-	[400]	-	Rd	6996.63	Ti I	15	-	-	6980.18	Pr	2	-	-	-	
7013.3	Pd	-	2	-	It	6996.4	Sb II	-	25	Dv	6979.85	Yt I	15	6	-	-	
7013.2	Pb II	-	[50]	-	Ea	6996.3	bh Zr	6	-	L	6979.82	Cr I	20 h	-	-	-	
7013.20	La I	4	-	-	-	6996.11	Cb	15	4	Me	6979.681	Cs	-	[15]	-	Sv	
7012.99	Sm II	2	-	-	Kn	6995.91	Sb	5 h	-	Wt	6979.59	Hf	3	20	-	Me	
7012.75	Se I	-	[200]	-	Rd	6995.39	Ta	200	-	-	6979.15	Rh I	25	-	-	-	
7012.52	Re	4	-	-	Me	6995.27	Nd	2	-	Kn	6979.10	N I	-	-	[5]	Du	
7012.25	Mn	10 h	-	-	Sl	6994.64	Rh	2 h	-	Me	6978.855	Fe I	60	12 h	-	Bb	
7011.86	Sm	4	-	-	Kn	6994.57	S I	-	[30]	Fh	6978.71	Mo	25	-	-	-	
7011.80	Mo	3	-	-	-	6994.39	Er	6	-	-	6978.50	Co I	2	-	-	Me	
7011.364	Fe	5 h	-	-	Bu	6994.32	Zr I	15	-	-	6978.48	Cr I	125 wh	-	-	-	
7011.05	Ti	12	-	-	-	6993.45	I I	-	[10]	Ev	6978.46	Sm	2	-	-	Kn	
7010.94	Ti I	15 w	-	-	Me	6993.42	Sm II	15	-	-	6978.39	Cb	8	2	-	Me	
7010.82	Se I	-	[500]	-	Rd	6993.26	W	3	-	-	6978.26	Gd	18	-	-	Ks	
7010.68	Hf II	5	10	-	Me	6993.14	Gd	20	-	Ks	6978.22	Sm	2	-	-	Kn	
7010.362	Fe I	3 h	-	-	Bu	6993.05	Kr I	-	[2]	Me	6978.19	Eu	10	-	-	Kn	
7010.	Bi II	-	3	-	Cf	6992.84	Sm	2	-	Kn	6978.06	La I	5	-	-	-	
7009.92	Yt I	9	6	-	-	6992.80	S I	-	[15]	Ms	6977.95	Kr II	-	[3 h]	-	Me	
7009.91	Sm	3	-	-	-	6992.17	A I	-	[4]	Ms	6977.68	Yb	2	-	-	Me	
7009.67	Sm	5 d	-	-	Kn	6991.93	Gd	150	-	-	6977.67	Ta	2	-	-	-	
7009.4	Yb	2	-	-	It	6991.77	Se I	-	[200]	Rd	6977.55	Sm I	10	-	-	Kn	
7009.31	Hg I	-	[5]	-	Su	6991.69	Mo	12	-	-	6977.445	Fe	4	-	-	Bu	
7009.15	Sm	2	-	-	Kn	6991.31	Dy	2	-	Ks	6976.934	Fe	3	-	-	Bb	
7008.95	Yt I	10	6	-	-	6991.12	Bi	10 h	-	Wt	6976.85	La	8	-	-	-	
7008.62	Kr	-	[2]	-	Me	6990.88	Xe II	-	[700]	Hu	6976.8	N II	-	[15]	-	Fm	
7008.41	Sm	8	-	-	Kn	6990.84	Zr I	50	-	-	6976.53	Si	25 h	-	-	Ks	
7008.35	Ti I	20	-	-	-	6990.7	bh Sc	7	-	Me	6976.42	Sm II	2	-	-	Kn	
7008.014	Fe I	9	-	-	Bu	6990.65	Se I	-	[300]	Rd	6976.35	Gd	20	-	-	Ks	
7007.46	Gd	5	-	-	Ks	6990.32	Cb	100	15	Me	6976.182	Xe I	-	[100]	-	IMe	
7007.39	Sm	5	-	-	Kn	6990.31	Ti I	8	-	Ri	6976.18	Hf	-	2	-	Me	
7007.04	Os	3	-	-	-	6990.16	A II	-	[4]	Rt	6975.99	Sm	10	-	-	Kn	
7006.96	Ta	100	-	-	-	6990.07	Sm	15	-	-	6975.91	Zr I	8	-	-	-	
7006.66	Ti I	15 W	-	-	-	6989.99	U	2	-	-	6975.70	Pt	5	-	-	-	
7006.65	Re I	100	-	-	-	6989.84	I	-	[20]	Ev	6975.62	Sm	6	-	-	Kn	
7006.16	Gd	80	-	-	-	6989.83	Pt	3	-	-	6975.05	Cb	12	2	-	Me	
7006.04	Sm I	4	-	-	Kn	6989.812	Mn	80	-	Sl	6974.58	V I	2	-	-	-	
7005.99	Tb	4	-	-	Ed	6989.657	Th	20	-	Fd	6974.5	bh V	3	-	-	L	
7005.90	Ta	2	-	-	-	6989.38	Cb	6	1	Me	6973.57	Ni I	2	-	-	-	
7005.84	Si I	50 h	-	-	Ks	6988.94	Mo	30	-	-	6973.54	Ce	3	-	-	-	
7005.6	bh Zr	3	-	-	L	6988.70	Gd	10	-	Ks	6973.35	Eu	8 W	-	-	Kn	
7005.5	bh Sc	5	-	-	Me	6988.530	Fe I	8	-	Bb	6973.29	Cs	500	-	-	-	
7005.46	Zr I	5	-	-	Ks	6988.40	Sm	40	-	-	6973.03	Er	4	-	-	-	
7005.21	Br I	-	[200 I]	-	Ks	6987.72	U	4	-	-	6972.91	Rh I	6	-	-	Me	
7005.07	Ta	50	-	-	-	6987.36	Sm	10	-	Kn	6972.49	Cb	20	4	-	Me	
7004.81	Co I	150	-	-	-	6986.79	Ba I	5	-	Me	6972.16	Sm	2	-	-	Kn	
7004.656	Ti I	15	-	-	Bh	6986.35	I	-	[15]	Ev	6971.97	Br I	-	[40]	-	Ks	
7004.46	Ni I	15	-	-	-	6986.09	Cb	20	3	Me	6971.64	Gd	20	-	-	Ks	
7003.98	Sm	2	-	-	Kn	6986.07	Ce	15	-	-	6971.61	Cb	15	3	-	Me	
7003.96	Xe II	-	[30]	-	Hu	6985.88	Gd	200	-	-	6971.53	Re I	150	-	-	-	
7003.58	Si I	50 h	-	-	Ks	6985.67	Sm	5	-	Kn	6971.53	Ta I	10 W	-	-	-	
7003.10	Xe I	-	[4]	-	Me	6985.6	Eu	2 W	-	Kn	6970.44	Hf	5	10	-	Me	
7003.10	Ta	2	-	-	-	6985.5	bh Sc	6	-	Me	6969.69	Sm II	15 d	-	-	-	
7002.84	Se I	-	[15]	-	Rd	6985.25	Nd	4	-	-	6969.49	Ta	3	-	-	-	
7002.52	Mn	2	-	-	Sl	6985.25	Sm	2	-	Kn	6969.09	Gd	8	-	-	Ed	
7002.222	S	-	[50]	-	Bz	6985.19	Re	20	-	-	6969.	Hg	-	[10]	-	Su	
7002.22	O I	-	[50]	-	Ps	6984.95	Os	10	-	-	6968.99	Sm	2	-	-	Kn	
7002.03	Sm I	2	-	-	Kn	6984.67	Mo	5	-	-	6968.9	bh Zr	2	-	-	L	
7001.914	S	-	[15]	-	Bz	6984.33	U	3	-	-	6968.73	La II	3	12	-	-	
7001.68	Ru	15	-	-	-	6984.30	W	4	-	-	6968.65	Sm II	25	-	-	Kn	
7001.62	Kr	-	[2]	-	Me	6984.16	Sm	10	-	Kn	6968.52	Ti II	-	5	-	MI	
7001.60	Mo	20	-	-	-	6983.52	Ta	20	-	-	6968.4	bh Ca	2	-	-	L	

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
6968.34	Cu I	3	-	-	6949.23	Sm	15 d	-	Kn	6929.79	Br I	-	[10]	Ks
6968.00	Mn	5 h	-	-	6948.720	Cb	3	3 h	-	6929.60	Sm	40 d	-	Kn
6967.68	Re	6	-	-	6948.58	U	6	-	-	6929.54	Dy	2	-	Ks
6967.6	N II	-	[5]	-	6948.46	Zr I	15	-	-	6929.468	Ne I	-	[1000]	IMe
6967.5	Ge II	-	2	-	6948.3	bh Sc	2	-	Me	6929.13	Gd	5	-	Ks
6966.95	Cl I	-	[2]	-	6948.18	Sm	20 d	-	Kn	6929.07	Zr I	8	-	-
6966.89	Cb	15	3	-	6947.49	Eu	4	-	Kn	6929.05	Cb	-	3	Me
6966.49	Sm	8	-	-	6947.43	Pd	-	2	-	6928.86	I	-	[10]	Ev
6966.46	Ir I	5	-	-	6947.39	Mo	15	-	-	6928.84	Sm	2	-	Kn
6966.44	Zr I	40	-	-	6947.3	Sb II	-	20	Dv	6928.54	Ta	150	-	-
6966.43	Ti II	-	40	-	6947.24	Gd	6	-	Ks	6928.319	Zn I	15	-	IHz
6966.35	F I	-	[70]	-	6946.87	Ta	20	-	-	6928.25	Ni I	2	-	-
6966.13	Ta	150	-	-	6946.75	Mo	7	-	-	6928.18	Sm	3	-	Kn
6965.95	Sm	8	-	-	6946.60	Sm	2	-	Kn	6928.	bh C	-	-	L
6965.9	Eu	4 W	-	-	6946.31	Co I	10	-	-	6927.70	Sm II	5	-	Kn
6965.83	U	2	-	-	6946.10	Ti I	10 h	-	Rl	6927.38	Ta	150	-	-
6965.80	Hf	1	3	-	6946.07	Cb	15	3	Me	6927.07	Sm II	40 d	-	-
6965.67	Rh	250	-	-	6945.96	Gd	20	-	Ks	6926.90	N I	-	[5]	Du
6965.430	A I	-	[400]	-	6945.22	N I	-	[40]	Du	6926.48	Gd	10	-	-
6965.4	Eu	2	-	-	6945.208	Fe I	60	20 h	Bb	6926.19	Hf	5	15	Me
6964.84	Sm	2	-	-	6944.99	Gd	5	-	-	6926.16	Ti I	35 w	-	Rl
6964.69	K I	-	[5]	-	6944.95	Er	6	-	Rs	6926.14	Sm	3	-	Kn
6964.67	Nd	5	-	-	6944.07	Rn I	-	[10]	-	6926.08	Er	6	-	-
6964.32	Gd	5	-	-	6944.06	Kr II	-	[10 hl]	Me	6925.94	U	2	-	-
6964.18	K I	-	[3]	-	6943.96	Lu	5	-	Me	6925.85	Mo	5	-	-
6964.16	W	2	-	-	6943.70	Ti I	15	-	-	6925.8	bh Ti	2	-	L
6964.10	Ti II	-	5	-	6943.69	Hg	-	[10]	Su	6925.71	Zr I	8	-	Ks
6963.93	Ti I	5	-	-	6943.610	Th	10	-	Fd	6925.70	Sm	4	-	Kn
6963.61	Sm	2	-	-	6943.202	Zn I	3	-	IHz	6925.53	Xe I	-	[100]	Me
6963.11	Yb	2	5	-	6943.07	Gd	5	-	Ks	6925.49	Rh	2	-	Me
6963.1	bh Sc	4	-	-	6942.9	N II	-	[30]	Fm	6925.21	La I	100	-	-
6961.63	Ba I	2 h	-	-	6942.518	Mn	100 h	-	Sl	6925.20	Cr I	50 h	-	Me
6961.6	bh Sc	4	-	-	6942.47	U	2	-	-	6925.20	Sm	3	-	Kn
6961.48	Mo	10	-	-	6942.11	Xe	-	[400 wh]	Hu	6925.00	A I	-	[2]	Ms
6960.98	Sm	2	-	-	6941.56	Sm II	50	-	Kn	6924.95	Gd	15	-	Ks
6960.77	Ce	10	-	-	6941.39	Nd	2	-	Ks	6924.83	Ce	20	-	-
6960.64	Mo	12	-	-	6941.03	I I	-	[2]	Mu	6924.67	Xe I	-	[15]	Me
6960.23	A I	-	[20]	-	6940.90	Cb	10	15	Me	6924.66	Te	-	[5]	Bl
6959.9	bh Zr	6	-	-	6940.20	Nd	2	-	-	6924.13	Cr I	60 h	-	-
6959.44	Mo	3	-	-	6939.54	Ce	8	-	-	6924.	Hg I	-	[5]	Su
6959.24	Gd	20	-	-	6939.51	Sm	3	-	Kn	6923.86	Nd	4	-	Ks
6959.10	Ir I	10	-	-	6939.38	Ta	4	-	-	6923.7	bh Zr	5	-	L
6959.08	Te	-	[15]	-	6939.36	U	2 h	-	-	6923.23	Ru	300	-	-
6958.97	Sm	10 d	-	-	6938.98	K I	500	-	Me	6923.20	Gd	3	-	Ed
6958.781	I II	-	[1000]	-	6938.74	Sm	10 d	-	Kn	6923.09	Tb	4	-	Ed
6958.49	Ti	10	-	-	6938.472	Zn I	8	-	IHz	6922.23	Zr I	8	-	Ks
6958.08	La II	25	50	-	6938.36	Er	6	-	-	6922.22	Xe I	-	[8]	Me
6958.03	Yt I	3	2	-	6938.1	Hg II	-	[25]	Rs	6922.21	Co I	5	-	-
6957.84	U	3	-	-	6937.81	Co I	150	-	-	6920.60	Gd	30	-	Ks
6957.73	Sm	2	-	-	6937.666	A I	-	[100]	IMe	6920.06	Cu I	100	-	-
6957.72	Gd	20	-	-	6937.53	Sm	3	-	Kn	6919.96	Al II	-	[25]	Sy
6957.51	Pt	3	-	-	6937.49	Gd	8	-	Ed	6919.61	Gd	5	-	Ks
6957.03	Mo	5	-	-	6936.7	bh Sc	4	-	Me	6919.6	bh Ti	4	-	L
6956.2	bh Ca	20	-	-	6936.69	Xe I	-	[8]	Me	6919.03	Sm I	30 d	-	Kn
6956.02	Os	3	-	-	6936.05	Ta	2	-	Ks	6919.02	Rh	4	-	Me
6955.63	Sm II	15 d	-	-	6935.88	Ti I	8	-	-	6918.78	Sm	20	-	Kn
6955.519	Cs II	-	[20]	-	6935.82	Cu I	8	-	-	6918.51	Ru	4	-	-
6955.27	Sm II	400 d	-	-	6935.62	Xe I	-	[50]	Me	6918.32	Cb	80	10	Me
6955.20	Gd	15	-	-	6935.51	Gd	5	-	Ks	6918.26	La I	20	-	-
6955.06	Ni I	80	-	-	6935.38	Sm	3	-	Kn	6917.84	Al II	-	[25]	Sy
6954.50	La II	15	10	-	6935.16	Hf II	5	50	Me	6917.54	Pd I	2	-	-
6954.43	Gd	3	-	-	6934.99	La I	50	-	-	6917.31	Lu	50	-	Me
6954.32	Sm	3	-	-	6934.86	Ru	4	-	-	6917.22	La I	25	-	-
6953.88	Ta	50	-	-	6934.27	W	2	-	-	6917.11	U	4	-	-
6953.84	Zr I	80	-	-	6934.13	Ce	2	-	-	6916.87	Zr I	12	-	-
6953.78	Mo	12	-	-	6934.10	Mo	15	-	-	6916.86	Se II	-	[15]	Bt
6953.61	Sm	3	-	-	6934.04	Yb	15	10	Me	6916.702	Fe I	35	5 wh	Bb
6952.49	La II	6	5	-	6933.632	Fe I	5 h	-	Bu	6916.69	Tb	4	-	Ed
6952.39	Sm	3	-	-	6933.52	Yt I	7	5	-	6916.6	bh V	3	-	L
6952.13	Cl II	-	[25]	-	6933.15	Ti I	12	-	-	6916.57	Gd	200	-	-
6951.87	Er	6	-	-	6932.94	Cl I	-	[10]	Ks	6916.55	Pd I	10	-	-
6951.77	Gd	8	-	-	6932.92	Ba I	2 h	-	Me	6915.58	Sb II	-	[8]	Lg
6951.67	Yt II	8	-	-	6932.70	In	-	5	Sq	6915.31	U	3	-	-
6951.51	Yb	2	-	-	6932.62	Dy	2	-	Ks	6914.98	Pd I	2 h	-	Me
6951.50	N I	-	[5]	-	6932.38	Zr I	12	-	-	6914.82	Eu	40 W	-	-
6951.46	A I	-	[20]	-	6932.36	Gd	5	-	Ks	6914.57	Ni I	300	-	-
6951.29	I	-	[15]	-	6932.12	Ce	4	-	Ks	6914.5	bh Sc	4	-	Me
6951.261	Fe I	10 h	-	-	6931.8	bh Zr	5	-	L	6914.01	Mo	40	-	-
6951.26	Ta	100	-	-	6931.40	Mo	15	-	-	6913.86	U	2 h	-	-
6950.69	Eu	2	-	-	6931.32	Se I	-	[15]	Rd	6913.54	Sm II	3	-	Kn
6950.51	Sm II	100	-	-	6931.13	Mn	20 h	-	Sl	6913.19	Ti I	7	-	-
6950.5	Ti II	-	30	-	6930.51	Te	-	[70]	Bl	6913.18	Te	-	[30]	Bl
6950.29	Dy	3	-	-	6930.45	Cl II	-	[4]	Ks	6912.78	Sm I	3 h	-	Kn
6950.27	Yt I	20	10	-	6930.41	Sm II	50 d	-	Kn	6912.27	Dy	2	-	Ks
6950.08	Ta	2	-	-	6929.88	Ir I	50	-	-	6911.85	Rh I	2 h	-	-

6911.4—6861.8 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
6911.48	Ru	100	-	6895.29	O II	- [70]	Mh	6878.74	Os	3	-
6911.44	Sm	3	-	6894.78	U	2	-	6878.53	Gd	6	-
6911.40	Hf	15	50	6894.55	Ce	6	-	6878.50	Co	2 h	-
6911.30	K	300	-	6894.00	V I	2	-	6878.38	Sr I	500	-
6911.29	Kr I	-	[2]	6893.69	Ce	5	-	6878.35	Pd I	2	-
6911.238	Th	10	-	6893.34	Ir	30	-	6877.94	Te	-	[50]
6910.84	Co I	15	-	6892.76	Pr	3	-	6877.49	Ta	30	-
6910.82	Xe I	-	[30]	6892.59	Sr I	100	-	6877.4	bh Sc	4	-
6910.75	O II	-	[30]	6892.42	Cs	-	[2]	6877.34	Tb	4	-
6910.22	Xe II	-	[50]	6892.41	Tb	4	-	6877.27	Sm	10	-
6910.20	Eu	10 W	-	6892.40	Ta	30	-	6877.10	Sm	25 d	-
6910.19	Xe I	-	[10]	6892.36	Mo	12	-	6876.75	U	8	-
6910.13	I II	-	[2]	6892.207	In II	-	[20]	6876.71	Ni I	25	-
6909.82	F I	-	[150]	6892.02	Sm	25	-	6876.69	Xe	-	[3 Wh]
6909.81	Sm II	50 d	-	6891.994	In II	-	[5]	6876.36	Cb	80	12
6908.80	Pt	3	-	6891.664	In II	-	[60]	6875.27	Sm II	20 d	-
6908.74	Eu	4	-	6891.626	In II	-	[40]	6875.27	Ta	200	-
6908.26	Yt I	10	-	6891.48	Sm	40 d	-	6875.02	In	-	30
6908.26	Er	4	-	6891.434	In II	-	[20]	6874.95	Hf	5	10 d
6908.20	Mo	20	-	6891.16	Rn I	-	[20]	6874.77	Th	2	-
6908.11	O II	-	[15]	6891.155	In II	-	[30]	6874.62	Nd	2	-
6908.08	Co	30	-	6890.93	Sc	3 h	-	6874.38	Re	2 w	-
6908.07	Cb	40	8	6890.90	Cu I	8	-	6874.30	N	-	[5]
6907.5	S	-	[30]	6890.767	In II	-	[5]	6874.3	Sb II	-	25
6907.37	Zr I	12	-	6890.76	Eu	3	-	6874.3	bh Sc	4	-
6907.21	Sm	2	-	6890.41	Xe	-	[3 Wh]	6874.18	Tb	6	-
6907.16	Hg I	-	[125]	6889.92	Cu I	8	-	6874.09	Ba II	-	[10]
6906.90	Gd	3	-	6889.82	Sc	7 h	-	6873.916	Ti I	10	-
6906.59	Cb	8	2	6889.10	Mo	5	-	6873.69	Sm	2	-
6906.57	Dy	3	-	6888.90	Dy	3	-	6873.61	U	5	-
6906.54	O II	-	[50]	6888.81	Sm I	10	-	6873.5	Au I	5	-
6906.34	Gd	2	-	6888.8	Ti II	-	10	6873.26	Sm II	20	-
6906.22	Sm	20	-	6888.74	Hg I	-	[25]	6873.2	Xe	-	[10 Wh]
6906.07	Nd	10	-	6888.72	Ir I	25	-	6872.95	Ru	5	-
6905.94	Cu I	40	-	6888.7	N II	-	[15]	6872.43	Cu II	-	3
6905.92	Ru	25	-	6888.66	I	-	[15]	6872.42	Sm II	100 d	-
6905.50	Gd	3	-	6888.61	Se	-	[30]	6872.40	Co I	200 w	-
6904.95	Br I	-	[10]	6888.48	Cb	15	-	6872.107	Xe I	-	[700]
6904.82	I II	-	[30]	6888.29	Zr I	25	-	6872.0	Pb II	-	[2]
6904.70	Mo	8	-	6888.17	A I	-	[100]	6871.56	V I	2	-
6904.68	Kr I	-	[100]	6887.9	Pr	2	-	6871.54	Yb	10	-
6904.51	Sm	40	-	6887.8	bh Zr	4	-	6871.290	A I	-	[150]
6904.36	Zr I	10 h	-	6887.755	Mn	30	-	6870.92	Cb	20	5
6904.22	Kr I	-	[15]	6887.62	Gd	35	-	6870.88	V I	3	-
6903.79	U	2	-	6887.62	U	3	-	6870.85	Kr II	-	[40]
6903.71	Eu	200 W	-	6887.42	Sm	20	-	6870.80	Hg	-	[15]
6903.1	Ra I	-	[30]	6887.20	Yt I	8	-	6870.8	N II	-	[5]
6902.98	In	-	5	6887.10	A I	-	[20]	6870.56	Te I	-	[5 w]
6902.89	Cb	60	10	6886.57	A II	-	[15]	6870.55	Pr	2	-
6902.84	Ni I	2	-	6886.33	Cb	30	-	6870.450	Cs I	200	[5]
6902.80	Fe	-	5 h	6886.28	Mo	25	-	6870.26	Sm	6	-
6902.55	U	3	-	6886.23	Ir I	10	-	6870.22	F I	-	[150]
6902.46	F I	-	[500]	6885.77	Fe I	10 h	8 h	6870.13	Ni I	3	-
6902.127	I II	-	[150]	6885.57	U	2	-	6870.1	Ir	2 h	-
6902.10	Ta	150	-	6885.4	Eu	2 W	-	6869.88	I	-	[15]
6901.88	Ni I	2	-	6885.3	bh Sc	8	-	6869.63	Kr I	-	[20]
6901.58	Os	3	-	6885.20	Zr	8	-	6868.55	Th	2	-
6901.52	Co	5	-	6885.16	Sm II	30	-	6868.13	Sm	2	-
6901.40	U	2 h	-	6885.04	Te	-	[30]	6867.87	Ba I	100 h	-
6900.68	Gd	60	-	6884.92	Sm II	6	-	6867.713	In II	-	[5]
6900.59	Zr I	12 h	-	6884.8	bh Zr	2	-	6867.53	Te	-	[5]
6900.55	Mo	4 h	-	6884.72	Pr	2	-	6867.11	Sm	15	-
6900.55	Ta	80	-	6884.13	Er	4	-	6866.838	Xe I	-	[50]
6900.43	Nd	10	-	6883.8	bh Ti	3	-	6866.53	Sm II	8 d	-
6900.37	In I	50	-	6883.46	Sm	2	-	6866.23	Ta	200	-
6900.28	Sm II	25 d	-	6883.25	Zr I	8	-	6865.76	Tb	4	-
6900.18	U	2	-	6883.11	Sm	2 h	-	6865.71	Ba I	200	-
6899.95	Tb	6	-	6883.03	Cr I	70 h	-	6865.58	Xe I	-	[5]
6899.34	Dy	5	-	6882.79	Sm	2	-	6865.44	Mo	3	-
6899.10	Ce	4	-	6882.38	Cr I	20 h	-	6865.20	Er	4	-
6899.097	Mo	12	-	6882.154	Xe I	-	[300]	6865.13	Ta	5	-
6898.74	U	3	-	6881.94	Cu I	8	-	6865.09	Se I	-	[15]
6898.48	Ce	-	-	6881.62	Cr I	15 wh	-	6864.91	Co	10	-
6898.27	Eu	30 W	-	6881.61	Se	-	[30]	6864.6	bh Sc	6	-
6898.01	Mo	15	-	6881.23	Pr	4	-	6864.59	U	2 h	-
6897.98	Dy	2	-	6881.1	bh Sc	5	-	6864.55	Eu	1000 W	-
6897.53	Er	6	-	6880.86	Sm I	2	-	6864.26	Yb	-	5
6897.	Hg	-	[5]	6880.07	Tb	4	-	6863.66	Mo	3	-
6896.77	Ta	30	-	6880.01	Er	6	-	6863.52	A II	-	[15]
6896.74	Pt	3	-	6879.94	Rh I	30	-	6863.20	Xe I	-	[20]
6896.68	Nd	2	-	6879.90	Cb	15	-	6863.08	Mn	2 h	-
6896.37	Tb	10	-	6879.59	A I	-	[40]	6862.82	Sm II	100 d	-
6896.01	Yt II	5	15	6879.52	Se I	-	[15]	6862.82	Kr	-	[3]
6895.70	Er	6	-	6879.50	Sm I	10	-	6862.481	Fe I	7	-
6895.40	Se	-	[30]	6879.22	I	-	[15]	6861.89	Gd	2	-

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
6861.47	Tl I	50	-	-	6846.54	Sm II	100 d	-	Kn	6832.47	Yt II	5	8	-
6861.30	Al II	-	[8]	Rt	6846.40	Kr I	-	[20]	Me	6832.46	Te	-	[30]	Bl
6861.24	Ni I	5	-	-	6846.34	Zr I	4	-	-	6832.13	Sm	2	-	Kn
6861.21	Br I	-	[30]	Ks	6846.25	U	3	-	-	6832.00	Ta	4	-	-
6861.06	Sm II	500 d	-	-	6845.76	Tm	200	20	Me	6831.62	Cl II	-	[30]	Ks
6860.93	Sm I	800 d	-	Kn	6845.74	Sm	4 d	-	Kn	6831.52	Ru	6	-	-
6860.403	In II	-	[2]	Ps	6845.66	Co I	10	-	Kn	6831.5	bh F	5	-	L
6860.392	Ti	20	-	Bh	6845.54	Pr	2	-	Ed	6831.37	Sm	2	-	Kn
6860.19	Xe I	-	[40]	Me	6845.33	Zr I	10	-	-	6831.27	Se I	-	[400]	Rd
6859.85	U	2	-	-	6845.24	Yt I	15	5	-	6831.21	Zn II	-	[8]	Vs
6859.02	La II	4	3	-	6844.98	Eu	40 W	-	-	6831.10	Tm	20	-	Me
6858.70	Hf	15	50	Me	6844.84	Xe I	-	[2 h]	Me	6830.89	Se I	-	[100]	Rd
6858.50	Gd	4	-	Ks	6844.71	Sm II	150 d	-	Kn	6830.83	La II	-	3	Me
6858.38	Co	25	-	-	6844.64	Ti	10	-	Bh	6830.71	Tb	4	-	Ed
6858.23	Yt II	3	8	-	6844.44	Re	6	-	Me	6830.57	Pr	2	-	-
6858.164	Fe I	15	15 h	Bu	6844.43	Ce	2	-	Ks	6830.56	Se I	-	[15]	Rd
6858.12	Sm	6	-	Kn	6844.27	Tm	250	30	Me	6830.54	Sm I	15	-	Kn
6858.1	bh Ti	4	-	L	6844.20	Sn II	-	[50 hl]	Wt	6830.01	Ir I	50	-	-
6857.90	Zr I	8 h	-	-	6844.06	Re	6	-	Me	6829.96	Re I	200 w	-	Me
6857.72	Sm	6	-	Kn	6843.94	Te I	-	[70]	Bl	6829.96	V I	4	-	-
6857.68	Rh I	8	-	Me	6843.75	Zr I	4	-	-	6829.81	Sm II	100	-	Kn
6857.6	N II	-	[5]	Fm	6843.671	Fe I	30	35 h	Bb	6829.54	Sc I	15	-	-
6857.25	Fe	5 wh	5 wh	Bu	6843.51	Rh I	5	-	Me	6829.33	Rh I	3	-	Me
6857.12	Gd	200	-	-	6842.98	Sb	5	[8]	Lg	6829.20	Sm	4	-	Kn
6857.03	Hf II	5	10	Me	6842.668	Fe I	8	5 h	Bu	6829.2	bh Cr	3	-	L
6857.00	Nd	8	-	-	6842.66	Nd	10	-	-	6829.09	Kr I	-	[8]	Me
6856.82	I	-	[15]	Ev	6842.60	Pt	10	-	Me	6829.05	Th	3	-	Fd
6856.53	Ce	4	-	Ks	6842.2	bh F	5	-	L	6828.98	Mo	50	-	-
6856.50	Dy	3	-	Ka	6842.07	Ni I	60	-	-	6828.90	Yb	1	6	Me
6856.03	Sm II	300 d	-	Kn	6841.90	V I	4	-	-	6828.78	Zr I	10	-	-
6856.02	F I	-	[1000]	En	6841.86	Cl II	-	[10]	Ks	6828.610	Fe I	18	25 h	Bb
6855.728	Ti	20	-	Bh	6841.78	Sm I	25	-	-	6828.50	Sm	30 d	-	Kn
6855.29	Hf II	7	50	Me	6841.50	Xe I	-	[20]	Me	6828.25	Gd	150	-	-
6855.179	Fe I	60	80 h	Bu	6841.349	Fe I	50	50 h	Bb	6828.11	Cb	150	30	Me
6854.7	Te I	-	[50 I]	Rd	6841.05	Eu	50 W	-	Kn	6828.02	I I	-	[15]	Db
6854.63	Zr I	6	-	Ks	6840.99	Cu I	3	-	Me	6827.81	Sm I	15	-	Kn
6854.50	Sm II	60 d	-	Kn	6840.96	Xe I	-	[8]	Me	6827.70	Pr	5	-	Ed
6854.17	U	3	-	Me	6840.26	Cl I	-	[2]	Ks	6827.33	Rh I	15	-	Me
6854.13	Tm	20	-	Me	6839.96	U	3	-	-	6827.315	Xe I	-	[200]	IME
6853.92	Sm I	5	-	Kn	6839.828	Fe I	3 h	-	Bu	6827.24	A I	-	[30]	Ms
6853.84	Zr I	6	-	-	6839.64	Sm	40 d	-	Kn	6827.16	Dy	2	-	Ks
6853.72	Nd	5	-	Ks	6839.62	V I	2	-	-	6827.12	Mn	2 h	-	-
6853.57	Ce	4	-	-	6839.23	Sm I	2	-	Kn	6827.03	Sm	4	-	Kn
6853.54	Sm	10 d	-	Kn	6839.08	Sm	15 d	-	Kn	6826.96	Co I	3	-	-
6853.32	Kr	-	[2]	Me	6838.9	Hg	-	[5]	Lf	6826.93	U	25	-	-
6853.00	Dy	6	-	Ks	6838.88	Mo	30	2	-	6826.65	Sm	3	-	Kn
6852.94	Sm	2	-	Kn	6838.86	Fe	5 h	5 wh	Bu	6826.59	Lu	4	-	Me
6852.90	Pr	3	-	Ed	6838.33	Sm	10	-	Kn	6826.56	Hf	10	25	Me
6852.79	Gd	5	-	Ed	6838.11	Co	15	-	-	6826.43	Ce	3	-	Ks
6852.56	Zr I	6	-	-	6838.08	Pt	4	-	Me	6826.09	Br	-	[5]	Ks
6852.3	bh Ti	6	-	L	6837.88	La II	15	8	-	6825.99	Er	4	-	Ed
6851.86	A I	-	[4]	Ms	6837.80	Rh	2	-	Me	6825.87	Zn II	-	[9]	Vs
6850.83	Ta	5	-	-	6837.8	Ir	4	-	It	6825.46	Er	6	-	Ed
6850.55	Pr	4	-	Ed	6837.65	Te	-	[50 w]	Bl	6825.34	Nd	2	-	-
6850.5	bh Sc	4	-	Me	6837.6	bh Sc	4	-	Me	6825.22	Cs I	15 h	-	-
6850.48	Ni I	2	-	-	6837.57	Rn I	-	[15]	Rs	6825.17	I	-	[5]	Bl
6850.21	Cl II	-	[40]	Ks	6837.20	Sm	20 d	-	Kn	6824.96	Ta	5	-	-
6850.2	bh Ti	5	-	L	6837.09	Al II	-	[15]	Sy	6824.73	Th	2	-	Fd
6850.13	Xe I	-	[30]	Me	6837.04	Fe	5 h	5 h	-	6824.56	U	3	-	-
6850.07	Hf	20	60	Me	6836.95	Rn I	-	[15]	Rs	6824.09	Ru	200	-	-
6849.89	Gd	5	-	Ks	6836.8	bh F	5	-	L	6823.75	La I	50	-	-
6849.523	In II	-	[5]	Ps	6836.60	Gd	3	-	Ks	6823.62	Sm II	15 d	-	Kn
6849.35	Cb	12	6	-	6836.6	Hg	-	[5]	Lf	6823.40	Cu II	-	3	Sh
6849.30	Nd	3	-	Ks	6836.2	N II	-	[5]	Fl	6823.38	Al II	-	[10]	Sy
6849.26	Zr I	6	-	-	6836.06	U	2	-	-	6822.73	Gd	15	-	Ed
6849.15	Ti I	5	-	Rl	6835.97	Sm	2	-	Kn	6822.65	Eu	15 W	-	Kn
6848.92	Mo	15	-	-	6835.70	I I	-	[15]	Db	6821.90	Sm	10	-	Kn
6848.9	bh Zr	3	-	L	6835.46	Cu I	3	-	Me	6821.86	Cu I	3 h	-	Me
6848.88	Sm II	40	-	Kn	6835.44	Dy	8	-	Ks	6821.51	La I	5 h	-	-
6848.82	Xe I	-	[60]	Me	6835.03	Sc	25	-	Me	6821.2	Eu	2 W	-	Kn
6848.31	Sm	10 d	-	Kn	6834.921	Th	5	-	Fd	6821.2	bh F	2	-	L
6848.16	Sm II	15 d	-	Kn	6834.82	Gd	10	-	Ks	6821.04	I	-	[30]	Bl
6848.08	S	-	[2]	Ms	6834.41	Eu	30 W	-	Kn	6820.91	Sm I	15	-	Kn
6847.77	In I	60	-	Ps	6834.40	Sm	2	-	Kn	6820.91	Gd I	50	-	-
6847.6	bh F	2	-	L	6834.26	F I	-	[300]	En	6820.84	U	6	-	-
6847.34	Zr I	2	-	Ks	6834.23	Mo	5	-	-	6820.39	Br I	-	[5]	Ks
6847.3	bh Zr	3	-	L	6834.02	La II	25	10	-	6820.38	Fe	10	7 h	-
6847.25	Ce	5	-	-	6833.92	Mn	40	-	Sl	6820.28	W	2	-	-
6847.21	Eu	10 W	-	Kn	6833.77	Hf	5	10	Me	6820.23	Pt	3	-	Me
6846.97	Co I	25	-	-	6833.67	Zr I	4	-	-	6820.2	bh Ti	3	-	L
6846.97	Zr	12	-	-	6833.42	Pd I	10	-	Me	6820.04	Yb	3 h	-	Me
6846.78	Ce	3	-	Ks	6833.26	Ta	2	-	-	6819.72	Sm	3	-	Kn
6846.715	Nd	10	-	-	6832.89	Zr I	10	-	-	6819.53	Co	20	-	-
6846.613	Xe I	-	[80]	IME	6832.83	U	2	-	-	6819.52	Sc I	20	-	-
6846.60	Gd	500	-	-	6832.49	V I	5	[10]	-	6819.36	Ta	15	-	-

6818.9—6769.4 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
6818.94	Hf	100	200	Me	6801.00	I I	-	[50]	Db	6784.52	Pd I	12	2	Me
6818.99	A II	-	[8]	Rt	6800.70	Gd	3	-	Ks	6784.35	Sm	5 d	-	Ks
6818.38	Xe I	-	[15]	Me	6800.5	bh Sc	3	-	Me	6784.0	bh Sc	3	-	Me
6818.35	U	4	-	-	6800.50	C II	-	30	Fl	6784.01	Ca	5 h	-	Me
6818.26	A I	-	[4]	Ms	6800.5	Yb	3	-	It	6783.75	C II	-	100	Fl
6818.25	Ce	5	-	-	6799.61	Yb	1000	50	Me	6783.718	In II	-	[100]	Ps
6818.24	Dy	2	-	Ks	6799.57	Re	3 w	-	Me	6783.35	Gd	40	-	-
6817.08	Sc	10	-	-	6799.40	Co I	6 h	-	-	6782.95	Sm	30 d	-	Kn
6816.83	Al II	-	[5]	Sy	6799.32	A II	-	[4]	Rt	6782.77	U	5 h	-	-
6816.47	Gd	40	-	-	6799.27	Ta	5	-	Ks	6782.7	Eu	20	-	Kn
6816.4	bh F	2	-	L	6798.68	Pr	20 w	-	-	6782.59	Eu	100	-	Kn
6816.16	Sm	4	-	-	6798.51	Ca I	6 h	-	Me	6782.54	Te	-	[5]	Bl
6816.11	Eu	150 W	-	-	6798.2	bh Sc	2	-	Me	6782.46	Ni I	5 w	-	-
6816.02	Nd	10	-	-	6798.04	C II	-	5	Fl	6782.3	Pd	-	5	It
6815.64	Xe I	-	[12]	Me	6796.93	Er	6	-	Ed	6782.17	Yb	4 h	-	Me
6815.54	Sm	10 d	-	Kn	6796.82	Sm I	10	-	Kn	6782.02	Tm	15	-	Me
6815.3	bh Ti	5	-	L	6796.73	La I	5	-	-	6781.97	Au	3 h	-	Wt
6815.28	Se I	-	[70]	Rd	6796.68	Zr I	4	-	-	6781.9	bh Ti	5	-	L
6815.16	Yt I	3	-	Me	6796.66	Te	-	[5]	Bl	6781.22	Se I, II	-	[20]	Rd
6814.94	Co I	150 R	-	-	6796.65	Rh I	6	-	Me	6781.17	Sm I	50 d	-	Kn
6814.86	Sm	20	-	Kn	6796.46	U	2	-	-	6780.74	Ce	5	-	-
6814.55	Gd	30	-	Ks	6796.13	Sm	4	-	Kn	6780.62	U	3	-	-
6813.75	U	2	-	-	6795.52	F I	-	[60]	En	6780.40	Cu II	-	3	Sh
6813.64	La II	5	25	-	6795.40	Yt II	12	-	20	6780.27	C II	-	15	Fl
6813.598	Ni I	30	-	-	6795.40	Kr I	-	[4]	Me	6780.268	Th	4 wh	-	Fd
6813.54	Sm	15	-	Kn	6795.31	Clb	10	6	-	6780.03	Sm	40	-	Kn
6813.51	Ru	9	-	Me	6795.08	Sm	2	-	Kn	6779.86	Er	4	-	Ed
6813.42	Re	200 w	-	Me	6794.66	Zr	4	-	Ks	6779.85	A I	-	[4]	Ms
6813.4	Sm	15	-	Kn	6794.58	Tb	10	-	Ed	6779.77	Tm	300	50	Me
6813.25	Ta	200	-	-	6794.5	Yb	5	-	It	6779.74	C II	-	50	Fl
6813.2	Ir	4	-	It	6794.20	Sm II	200	-	Kn	6779.58	Sm	2	-	Kn
6813.19	I	-	[15]	Bl	6793.77	Lu	40	2	Me	6779.48	Br I	-	[10]	Ks
6813.10	Kr I	-	[50]	Me	6793.70	Yt I	70	15	-	6779.16	Sn I	15	-	Kn
6812.93	U	2	-	Me	6792.90	Sm	2	-	Kn	6778.75	Sb II	-	[4]	Lg
6812.64	Zr	6	-	-	6792.55	Sm II	30 d	-	Kn	6778.61	Sm II	200 d	-	Kn
6812.562	I II	-	[100]	Ke	6792.48	Tb	4	-	Ed	6778.60	Xe I, II	-	[40]	Me
6812.5	bh Zr	3	-	L	6792.45	I II	-	[15]	Bl	6778.38	Sb	5	40	Wt
6812.43	V I	8	[20]	-	6792.28	Nd	2	-	Ks	6778.28	Ce	10	-	-
6812.30	Nd	3	-	Ks	6791.90	Rn I	-	[6]	Rs	6778.19	Sm II	30	-	Kn
6812.26	N II	-	[15]	Fl	6791.9	bh C	-	-	L	6778.10	Cd I	30	-	Ps
6812.19	I I	-	[50]	Ev	6791.7	Pb II	-	[10]	Ea	6777.77	Gd	3 h	-	Ed
6811.37	Re	3	-	Ks	6791.60	Os	10	-	-	6777.57	Xe I	-	[50]	Me
6811.32	Zr I	4	-	Ks	6791.6	Eu	2 W	-	Kn	6777.56	So	-	[15]	Bt
6810.46	Ta	40	-	-	6791.50	Br I	-	[5]	Ks	6777.22	Yb	2	-	Me
6810.25	Fe I	15	18 h	-	6791.30	C II	-	30	Fl	6777.2	bh Zr	4	-	L
6809.90	Cu II	-	4	Sh	6791.27	Th	2	-	Fd	6776.89	U	5	-	-
6809.23	Sm	2	-	Kn	6791.19	Ni I	2	-	Me	6776.75	S	-	[30]	Bl
6808.94	Co I	25 h	-	-	6791.05	Sr I	200	-	-	6776.65	Ta	2	-	-
6808.89	Ce	3	-	Ks	6790.88	Sm I	4	-	Kn	6776.15	Kr I	-	[3]	Me
6808.84	La II	12	15	-	6790.85	Zr I	10	-	-	6776.14	Er	4	-	Ed
6808.6	Bi II	-	70	Cf	6790.8	Pb II	-	[50]	Ea	6775.97	Al II	-	[2]	Sy
6808.55	A II	-	[6]	Rt	6790.41	Nd	10 d	-	Hu	6775.64	Cu I	8	-	Me
6808.38	Rn I	-	[10]	Rs	6790.37	Xe II	-	[50]	-	6775.59	Ce	10	-	-
6808.31	Sm I	20	-	Kn	6790.35	U	10	-	-	6775.30	Sm I	15	-	Kn
6807.83	Ce	10	-	-	6790.06	Ta	5	-	-	6775.062	Rb II	-	200	Lp
6807.50	Sm	5	-	Kn	6790.05	Br I	-	[70]	Ks	6775.02	Ru	40	-	-
6806.859	Fe I	8 h	7 wh	Bu	6790.03	Sm II	300 d	-	-	6774.54	Pd I	15	-	Me
6806.79	Rn I	-	[12]	Rs	6790.0	Te I	-	[20 w]	Rd	6774.29	Ce	3	-	-
6806.67	Sb II	-	[12]	Lg	6789.84	Ir I	4	-	Me	6774.25	Ta	100 w	-	-
6806.61	Os	8	-	Me	6789.32	I I	-	[50]	Ev	6774.23	La II	100	120	-
6806.60	Cu II	-	4	Sh	6789.27	Hf	50	100	Me	6774.08	Er	6	-	-
6806.35	Sb	5 wh	-	Wt	6789.26	Co I	15	-	-	6773.97	F	-	[100]	En
6806.16	Sb II	-	30	-	6789.17	Cr	40	-	-	6773.56	I I	-	[50]	Db
6805.74	Xe II	-	[400]	Hu	6788.99	Ta	50	-	-	6773.40	Er	4	-	Ed
6805.646	Rb II	-	50	Rr	6788.93	I I	-	[100]	Db	6773.07	Hf	5	15	Me
6805.58	Sm	2	-	Kn	6788.71	Xe II	-	[80]	Hu	6772.89	Zr I	8	-	-
6805.54	Ru I	5	-	-	6788.53	Tm	20	-	Me	6772.42	Eu	4 W	-	Kn
6805.36	Re	3 h	-	Me	6788.27	Pr	20 h	-	Ed	6772.36	Ni I	200	-	-
6805.24	Se I	-	[200]	Rd	6787.52	Eu	30 W	-	Kn	6772.283	Th	2	-	Fd
6804.89	Sm	10 d	-	Kn	6787.23	Ru	20	-	-	6772.03	Gd	20	-	Ks
6804.020	Fe I	7 h	-	Bb	6787.15	Zr II	4	2	Ks	6772.02	Sm	5	-	Kn
6804.00	Nd	15	-	-	6787.14	Gd	20	-	Ks	6771.85	Ba I	60 h	-	Me
6803.20	Dy	2	-	Ks	6787.09	C II	-	15	Fl	6771.8	bh Cr	4	-	L
6803.20	Ce	2	-	Ks	6786.88	Fe I	7 h	-	Bu	6771.74	Ta	100	-	-
6803.16	Yt I	4	-	Me	6786.77	Br I	-	[30]	Ks	6771.36	Sm	8	-	Kn
6803.1	Sm	30 h	-	Kn	6786.37	V	3	-	-	6771.22	Kr II	-	[50]	Me
6803.06	Nd	4	-	Ks	6786.36	Rn I	-	[4]	Rs	6771.06	Co	200 h	-	-
6802.96	Sm I	25	-	Kn	6786.32	Gd	125	-	Ks	6771.03	U	3	-	-
6802.79	Eu	500	-	Kn	6785.9	Pb II	-	[15]	Ea	6770.70	Cu II	-	8	Sh
6802.47	Yb	2	20	Me	6785.8	bh Ti	4	-	L	6770.37	Sm	10	-	Ks
6801.72	Sm	15 d	-	Kn	6785.16	Yb	1	5	Me	6770.37	Ta	3	-	-
6801.65	Re	5	-	Me	6785.12	Tb	8	-	Ed	6769.95	Hf II	10	20	Me
6801.38	La II	-	3	Me	6785.03	V I	15	-	-	6769.81	Tb	4	-	Ed
6801.34	Sm	2	-	Kn	6784.9	Eu	4 W	-	Kn	6769.62	Ba II	-	[10]	Rs
6801.34	Nd	4	-	Ks	6784.85	Co I	25	-	-	6769.44	Sm	2	-	Kn

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
6769.40	U	2	-	-	6753.02	La I	100	-	-	6735.82	Sm	4 h	-	Kn
6769.159	Zr I	50	-	-	6752.832	A I	-	[200]	IMe	6735.76	Lu	5	-	Me
6768.94	Er	4	-	Ed	6752.734	Fe I	9	12 wh	Bb	6735.4	bh F	2	-	L
6768.70	Yb	80	2	Me	6752.73	Zr I	15	-	Ks	6735.4	bh Sc	2	-	Me
6768.64	U	2	-	-	6752.68	Gd	300	-	-	6735.34	Sm	100 d	-	Kn
6768.50	Se I	-	[80]	Rd	6752.6	bh Sc	4	-	Me	6735.04	Nd	5	-	Ks
6767.91	Hf II	2	2	Me	6752.58	Cr	2	-	SI	6735.0	Eu	3 W	-	Kn
6767.778	Ni I	300	-	IKs	6752.40	N I	-	[50]	Du	6734.81	Sm II	400 d	-	Kn
6767.65	Ce	3	-	Ks	6752.35	Rh I	150	-	-	6734.61	S	-	[15]	Bl
6767.60	Co	35 h	-	Me	6752.1	P	15	-	Sa	6734.188	Cr I	12	-	-
6767.405	In II	-	[5]	Ps	6752.07	Se	-	[30]	Ms	6734.06	Sm II	400 d	-	Kn
6767.394	Co I	15	-	-	6752.042	In II	-	[40]	Ps	6733.978	Mo	100	4	-
6767.12	Xe I	-	[10]	Me	6752.03	Re	50	-	Sj	6733.8	Eu	2 W	-	Kn
6766.97	F	-	[5]	En	6751.880	In II	-	[60]	Ps	6733.48	N I	-	[100]	Du
6766.95	Ru	30	-	-	6751.81	Rn I	-	[40]	Rs	6733.171	Fe I	5	-	Bu
6766.91	Gd	15	-	Ks	6751.8	bh Ti	4	-	L	6733.12	Ir I	3	-	Me
6766.6	Eu	2 W	-	Kn	6751.615	In II	-	[30]	Ps	6732.78	La II	1	20	-
6766.56	A I	-	[100]	Ms	6751.40	Te	-	[50]	Bl	6732.3	Eu	4 W	-	Kn
6766.56	V I	30	-	-	6751.27	Cr	2	-	-	6732.10	I	-	[150]	Ev
6766.52	Sm II	50 d	-	Kn	6751.22	Re	50	-	Me	6732.06	Nd	10	-	Kn
6766.334	In II	-	[50]	Ps	6751.10	Sm	2	-	Kn	6731.84	Sm II	500 d	-	Kn
6765.964	In II	-	[50]	Ps	6750.86	Sm	2	-	Kn	6731.80	Ru	4	-	-
6765.96	Dy	6	-	Ks	6750.520	In II	-	[20]	Ps	6730.76	Gd	100	-	-
6765.378	In II	-	[30]	Ps	6750.30	Eu	10	-	Kn	6730.45	Ru	25	-	-
6764.51	Kr I	-	[5]	Rs	6750.22	C II	-	15	Fl	6730.16	Rn I	-	[10]	Rs
6764.45	Ce	2	-	-	6750.157	Fe I	50	18 h	-	6729.732	Cr	10	-	-
6764.43	Kr II	-	[80]	Me	6749.97	Cu II	-	3	Sh	6729.556	Os	30	-	-
6764.14	I	-	[30]	Bl	6749.60	Nd	10	-	Kn	6729.54	Ce	10	-	-
6763.78	Nd	3	-	Ks	6749.51	Ce	2	-	-	6729.47	S	-	[30]	Bl
6763.61	Kr II	-	[180]	Me	6749.40	Yb	7	-	Me	6729.4	bh F	20	-	L
6763.50	Mo	8	-	-	6749.29	Cu I	8	-	Me	6728.93	Nd	8	-	Ks
6763.01	Nd	3	-	Ks	6749.28	Pr	6	-	Ed	6728.710	Ce	8	-	-
6762.96	Er	4	-	Ed	6748.79	S I	-	[80]	Ms	6728.29	Br I	-	[40]	Ks
6762.89	F	-	[10]	En	6748.62	Ir	4	-	Me	6728.24	Sm	8	-	Kn
6762.71	Rn I	-	[8]	Rs	6748.39	Sm	4	-	Kn	6728.09	U	2	-	-
6762.58	Sm	10	-	Ks	6748.3	bh Sc	3	-	Me	6728.04	Mo	7	-	-
6762.41	Cr	50	-	-	6748.125	La I	25	-	-	6728.008	Xe I	-	[200]	IMe
6762.38	Zr I	50	-	Ks	6747.98	Dy	4	-	Ks	6727.866	O I	-	[70]	Fh
6762.13	F	-	[5]	Gl	6747.8	bh Ti	5	-	L	6727.84	Gd	50	-	Ks
6762.06	Sm	25	-	Ks	6747.2	Pr	20 W	-	Kn	6727.740	Nd	2	-	-
6761.86	Ba I	2 h	-	Me	6746.66	Sm	2	-	Kn	6727.62	Yb	30	60	Me
6761.70	Sm	2	-	Kn	6746.61	Cr	6	-	-	6727.27	Sm	2	-	Kn
6761.69	Er	4	-	Ed	6746.433	Ti I	4	-	-	6727.00	I	-	[70]	Ev
6761.54	Gd	5 h	-	Ks	6746.43	Se I	-	[200]	Rd	6726.89	U	3	-	Ks
6761.45	Sn II	-	[15]	Mc	6746.41	Sm II	20	-	Kn	6726.81	Sm	15	-	-
6761.34	Te	-	[30]	Bl	6746.268	Mo	50	3	-	6726.78	Fe	15	-	-
6761.19	Re	10 w	-	Me	6746.075	Mo	20	-	-	6726.668	Fe I	-	8 h	Bu
6760.71	S	-	[30]	Bl	6745.22	Yb	2	7	Me	6725.90	Sm I	30	-	Kn
6760.20	V	2	-	-	6745.18	Nd	5	-	Ks	6725.83	Cd II	-	100	Vs
6760.11	Br I	-	[10]	-	6744.96	Eu	100	-	Kn	6724.73	Sm I	30	-	Kn
6760.020	Pt	100	-	-	6744.64	Cr	6	-	-	6724.646	Cs	-	10	Ms
6759.87	Er	8	-	Ed	6743.64	Sm	2	-	Kn	6724.0	bh F	5	-	L
6759.586	Ne I	-	[15]	Ps	6743.58	S I	-	[50]	Ms	6724.0	bh Ti	5	-	-
6759.42	Cl II	-	[35]	Ks	6743.124	Ti	100	-	IKs	6723.62	Cb	100	30	Me
6759.41	Ni I	2	-	Me	6742.537	Nd	10	-	-	6723.52	I	-	[15]	Bl
6759.26	Cd II	-	30	Vs	6742.5	bh Zr	4	-	L	6723.36	Kr I	-	[4]	Me
6759.25	Sm I	15	-	Kn	6742.17	Co I	5	-	-	6723.279	Cs	500	6	Ms
6758.73	Ni	2	-	SI	6741.9	Eu	2	-	Kn	6723.26	Sm	30	-	Kn
6758.60	N I	-	[50]	Du	6741.56	I I	-	[50]	Ev	6723.12	N I	-	[500]	Du
6758.55	Cu II	-	8	Sh	6741.47	Sm II	40	-	Kn	6723.07	Sm	30	-	Kn
6758.53	Eu	4 W	-	Kn	6741.42	Cu I	50	-	Me	6722.90	A I	-	[4]	Ms
6758.34	Sm	2	-	Kn	6741.40	Ru	15	-	-	6722.76	Er	6	-	Ed
6758.2	Ra I	-	[50]	Rs	6741.29	N I	-	[30]	Du	6722.71	Co I	4	-	-
6758.10	Co I	25	-	-	6741.20	La	2	-	Me	6722.5	Ir	5	-	It
6757.77	Cr	8	-	-	6741.2	Sm	25	-	Kn	6721.93	Er	8	-	Ed
6757.10	S I	-	[150]	Ms	6740.73	Ta	80	-	-	6721.92	Cb	2	-	-
6756.94	Sm II	50	-	Kn	6740.107	Nd	10	-	-	6721.62	Sm	10	-	Kn
6756.61	A II	-	[10]	Rt	6740.10	Kr I	-	[20]	Me	6721.54	Ir	4	-	Me
6756.57	Co I	25	-	-	6739.88	Cb	80	15	Me	6721.37	Se I, II	-	[60]	Rd
6756.54	Ru I	9	-	-	6739.50	I I	-	[50]	Ev	6721.37	Tm	60	20	Me
6756.3	bh Ti	6	-	L	6739.40	Sc	3	-	-	6721.35	O II	-	[70]	Fl
6756.10	A I	-	[100]	Ms	6738.99	Sb	2	-	Wt	6721.33	Rh I	2	-	Me
6755.85	Ta	10	-	-	6738.36	C II	-	5	Fl	6721.21	O II	-	[300]	Mh
6755.72	I	-	[16 h]	Bl	6738.12	I	-	[70]	Ev	6720.95	Co I	4	-	-
6755.01	Tb	4	-	Ed	6738.058	Ne I	-	[70]	Ps	6720.95	Sm	5 w	-	Kn
6754.97	U	3	-	-	6737.87	Sc	5	-	-	6720.84	U	3	-	-
6754.91	Ta	20	-	-	6737.787	Nd	10	-	-	6720.67	I	-	[15]	Bl
6754.85	Sm	30	-	Kn	6737.697	Cr	5	-	-	6720.32	Ce	2	-	Ks
6754.77	Gd	5	-	Ed	6737.64	Cu II	-	5	Sh	6719.59	Sm	5	-	Kn
6754.68	Sm II	50	-	Kn	6737.16	Cb	3 w	1 w	Me	6719.40	Hf II	2	50	Me
6754.61	Hf II	60	100	Me	6736.89	Pr	5	-	Ed	6719.32	Ra II	-	[500]	Rs
6754.30	A I	-	[8]	Ms	6736.804	U	4	-	-	6719.3	bh Ti	6	-	L
6753.97	Mo	25	2	-	6736.60	I	-	[50]	Ev	6719.20	A I	-	[100]	Me
6753.90	Gd	100	-	Ks	6736.32	Te	-	[30]	Bl	6719.1	bh F	5	-	L
6753.03	V I	40	-	-	6736.00	Yt I	12	4	-	6718.803	I I, II	-	[50]	Ks

6718.6—6675.5 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
6718.67	La II	3	30	6704.25	Sm	10	-	6689.29	Sm	3	-
6718.6	bh F	10	-	6704.17	Gd	25	-	6688.81	Sm	4	-
6718.30	Ru I	15	-	6703.92	Co I	15	-	6688.49	Te	-	[5]
6718.22	Sm	4	-	6703.61	Sm I	30	-	6688.175	Zr I	10	-
6718.14	Gd	40	-	6703.575	Fe I	7	5 wh	6688.01	Sb	-	[30]
6718.0	bh Zr	2	-	6703.18	Cb	6	1	6687.866	Mo	7	-
6717.911	Ti II	10	-	6703.06	U	2	-	6687.82	Gd	5	-
6717.9	Eu	3 W	-	6702.99	Ta	2	-	6687.79	Sm II	80 d	-
6717.879	Zr I	12	-	6702.61	Tb	6	-	6687.74	I	-	[15]
6717.74	S	-	[50]	6702.25	Xe II	-	[50]	6687.60	Yt I	50	10
6717.685	Ca	-	-	6702.19	Sm	5	-	6687.36	Te	-	[5]
6717.64	Sc	3	-	6702.125	Zr I	6	-	6687.12	Er	4	-
6717.64	Co I	5 h	-	6702.09	Gd	25	-	6686.79	Pd I	3	-
6717.556	Fe I	5 h	-	6701.68	U	2	-	6686.7	Te I	-	[7 w]
6717.51	U	5	-	6701.633	Cr	3	-	6686.65	Rh I	2 h	-
6717.15	Sm	2	-	6701.57	Te	-	[5]	6686.6	bh Zr	2	-
6717.0428	Ne I	-	[70]	6701.205	Cb	100	15	6686.59	Ce	8	-
6716.679	Ti	15	-	6701.11	Eu	10 W	-	6686.36	Sm	2	-
6716.17	Hg I	-	[80]	6701.04	Se I	-	[30]	6686.08	Ir	20	-
6716.00	Hf	1	5	6700.72	Yt I	12	8	6686.04	Cl II	-	[45]
6715.83	S	-	[30]	6700.70	Ca	20	-	6686.03	Te	-	[30]
6715.79	Yb	5	-	6700.66	Dy	3	-	6685.71	Pd I	2	-
6715.410	Fe I	5 h	-	6700.60	Te	-	[15]	6685.32	I II	-	[5]
6715.36	Cr I	8	-	6700.6	Yb	3	-	6685.27	Eu	80	-
6715.2	Hg II	-	[25]	6700.5	bh Sc	5	-	6685.02	Sm	2	-
6714.98	Tb	4	-	6699.84	La	8	-	6684.87	Co I	30	-
6714.60	Sc I	5	-	6699.70	Rn I	-	[8]	6684.73	A I	-	[6]
6714.44	Ta	4	-	6699.56	Se I	-	[125]	6684.4	Sm II	25 d	-
6714.4	bh Ti	6	-	6699.38	Yb	10	8	6684.36	A II	-	[30]
6714.09	La II	4	40	6699.26	Yt	18	4	6684.08	Co	30	-
6714.03	Ba I	2 h	-	6699.25	Sm	8	-	6684.00	Ta	40	-
6713.86	Sm	2	-	6699.23	La	8	-	6683.45	U	6	-
6713.69	Ti I	100	40	6699.228	Kr I	-	[60]	6683.30	Re	15 W	-
6713.60	Sb II	-	[6]	6698.92	Sm	2	-	6682.92	S	-	[15]
6713.5	Hf	10	20	6698.85	A I	-	[100]	6682.57	Sm	5 d	-
6713.48	Ce	4	-	6698.78	Al	10	-	6682.36	Se I	-	[20]
6713.43	Cl II	-	[40]	6698.53	I	-	[50]	6682.29	Br I	-	[90]
6713.19	Yt I	15	4	6698.45	A I	-	[6]	6682.04	Eu	8 W	-
6713.18	Dy	2	-	6698.11	Sm	4	-	6681.92	S	-	[30]
6713.13	I I	-	[5]	6697.94	Zr I	4	-	6681.56	Pd I	3	-
6713.12	N	-	[5]	6697.33	I I	-	[90]	6681.53	Sm II	60 d	-
6713.00	Te	-	[5]	6697.28	Sm	6	-	6681.24	S	-	[30]
6712.8	Sm	8	-	6696.86	Sm	3	-	6681.22	Gd	100	-
6712.75	S	-	[30]	6696.44	Cb	3	3	6681.15	U	2	-
6712.71	Co I	8 h	-	6696.39	Al II	10	[2]	6681.1	bh Ti	6	-
6712.62	Sm II	50	-	6695.97	Al I	-	[50]	6681.036	Xe I	-	[20]
6712.13	Sm	25 d	-	6695.86	Eu	4 W	-	6681.03	Cl II	-	[15]
6711.51	Sm	5	-	6695.31	Sm	3	-	6680.26	Ti II	-	5
6711.29	Re I	10	-	6694.91	Gd	20	-	6680.143	Nd	2	-
6710.9	bh Zr	2	-	6694.75	Yt I	4	-	6679.809	Ce	5	-
6710.70	Sm	20 d	-	6694.69	Sm II	30 d	-	6679.771	Nd	2	-
6710.57	U	2	-	6694.32	Xe II	7	[200]	6679.66	Mo	3	-
6710.50	Eu	25 W	-	6694.32	Ho	7	-	6679.54	Gd	25	-
6710.416	Pt	50	-	6693.97	Eu	500	-	6679.43	Se I	-	[70]
6710.16	Ce	2	-	6693.88	Ba I	600	100	6679.24	Sm II	80	-
6709.88	Cb	15	2	6693.61	Ta	10	-	6679.1	Sm	60	-
6709.609	Zr I	8	-	6693.55	Sm II	100 d	-	6678.972	Xe I	-	[25]
6709.5	Hg	-	[5]	6693.38	Tb	6	-	6678.892	Mo	5 h	-
6709.496	La I	150	-	6693.118	W	3	-	6678.81	Co I	125	-
6709.41	Hf	1	6	6692.98	Eu	40	-	6678.81	Zr I	2	-
6709.39	Ta	10	-	6692.93	Tm	15	-	6678.711	Th	2	-
6709.33	Sm	2	-	6692.87	La I	50	-	6678.523	Nd	2	-
6708.81	N	-	[50]	6692.87	Co I	4	-	6678.45	Cl I	-	[2]
6708.34	Te	-	[30]	6692.85	Gd	25	-	6678.414	W	3	-
6708.33	Hf	-	3	6692.811	Au	2	-	6678.2764	Ne I	-	[500]
6708.284	F I	-	[40]	6692.57	Sm	3	-	6678.17	Yb	20	-
6708.18	B	20	-	6692.16	Br I	-	[70]	6678.149	He I	-	[100]
6708.17	V I	2	-	6691.85	Yt I	3	2	6678.01	Zr II	-	3
6707.857	Co	200 Wh	-	6691.67	Hf	2	3	6678.0	bh Zr	5	-
6707.85	Mo	300 W	-	6691.581	Mn	25	-	6678.00	Sm	3	-
6707.844	Li I	3000 R	200	6691.33	Pr	2 W	-	6677.993	Fe I	250	150
6707.524	Ru	5	-	6691.21	U	2	-	6677.94	Tb	12	-
6707.45	Sm II	50 d	-	6691.2	bh Sc	4	-	6677.46	Sm	3	-
6707.1	Sm	2	-	6691.2	bh Ti	4	-	6677.33	Cb	200	50
6706.85	Sm	5	-	6691.08	Mo	5	-	6677.3	bh C	-	-
6706.79	Tb	4	-	6690.88	Gd	5 h	-	6677.282	A I	-	[30]
6706.46	Ta	5	-	6690.80	Ni I	2	-	6677.20	Cr	2	-
6706.20	N I	-	[50]	6690.47	F I	-	[60]	6677.175	Ti I	18	-
6705.96	Ta	3	-	6690.47	Mo	20	2	6677.14	Lu	40	1
6705.92	Ce	2	-	6690.14	Te I	-	[18 w]	6677.06	Sm	10	-
6705.9	bh Sc	6	-	6690.001	Ru	300	-	6676.925	U	8	-
6705.50	Sm	2	-	6689.91	A I	-	[2]	6676.14	La II	-	2
6705.117	Fe I	12 h	12 wh	6689.85	Hg	-	[5]	6676.01	Te	-	[70]
6704.32	Ce	25	-	6689.70	Ce	3	-	6675.60	Sm	3	-
6704.28	Rn I	-	[15]	6689.51	Tb	4	-	6675.544	Ce	3	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
6675.53	Ta	400	-	-	-	6659.189	Ir I	5	-	-	-	6644.96	N I	-	-	[500]	Du
6675.5	Hg II	-	-	[5]	-	6658.681	Th	4 h	-	-	-	6644.66	Th	3	-	-	-
6675.268	Ba I	500	100	-	-	6658.62	Tm	30	40	-	-	6644.60	Hf II	100	200	-	Me
6674.68	Sm	2 h	-	-	-	6658.40	Dy	4	-	-	-	6644.407	La I	40	-	-	-
6673.778	Pr	40	-	-	-	6658.07	Te	-	-	[5]	-	6644.07	Yb	2	5 h	-	Me
6673.73	Ta	200	-	-	-	6657.92	Xe I	-	-	[20]	-	6644.04	Gd	8	-	-	-
6673.410	Pr	30	-	-	-	6657.83	Se I, II	-	-	[10]	-	6643.88	Sm	4	-	-	Kn
6672.850	V	-	-	2	Me	6657.73	Tm	70	10	-	-	6643.79	A II	-	-	[100]	Rt
6672.70	Te	-	-	[5]	Bl	6657.7	bh Ti	2	-	-	-	6643.77	Ba	4 h	-	-	Lr
6672.52	Sm	2	-	-	Kn	6656.88	A I	-	-	[6]	-	6643.67	Ir	3	-	-	-
6672.33	I	-	-	[30]	Bl	6656.829	Pr	30	-	-	-	6643.65	Co	2 h	-	-	-
6672.23	Ru	5	-	-	-	6656.813	U	4	-	-	-	6643.641	Ni I	300 w	-	-	IKs
6672.23	Cu I	15	-	-	Me	6656.61	N I	-	-	[5]	-	6643.540	Sr I	100	-	-	-
6672.20	Sm	3	-	-	Kn	6656.56	Gd	15	-	-	-	6643.54	Yb	50	-	-	Me
6672.10	A I	-	-	[2]	Ms	6656.19	Sm II	100	-	-	-	6643.41	Dy	4	-	-	Ks
6671.90	Eu	4 W	-	-	Kn	6655.672	Nd	10	-	-	-	6643.023	Cr	5	-	-	-
6671.48	Sm I	50	-	-	-	6655.6	bh F	100	-	-	-	6642.787	La II	10	25	-	-
6671.382	La II	10	25	-	-	6655.47	Ce	3	-	-	Kn	6642.75	Gd	5	-	-	Ks
6671.29	Hf	1	3	-	Me	6654.809	Ce	2	-	-	-	6642.27	Tb	4	-	-	Ed
6671.29	U	3	-	-	-	6654.77	O	-	-	[10]	-	6642.0	bh F	50	-	-	L
6670.73	Sm	3	-	-	Kn	6654.4	bh Sc	7	-	-	Me	6641.74	U	2	-	-	Me
6670.6	Te	-	-	[50]	Rd	6654.30	Ce	3	-	-	-	6641.57	Sm	3	-	-	Kn
6670.391	Nd	2	-	-	-	6654.30	Sm	4	-	-	Kn	6641.50	S	-	-	[15]	Bl
6669.60	Rn I	-	-	[12]	-	6654.27	Dy	3	-	-	-	6641.41	Cu II	-	-	10	-
6669.31	Sm	10 d	-	-	Rs	6654.121	O I	-	-	[50]	-	6641.15	Ce	3	-	-	Sh
6669.31	Hf	1	3	-	Me	6654.05	Ba I	50	-	-	Me	6640.90	O II	-	-	[70]	Fl
6669.257	Cr I	80	-	-	-	6653.75	Cl II	-	-	[25]	-	6640.80	Ne I	-	-	[5]	Gr
6669.11	Ta	3	-	-	-	6653.41	N I	-	-	[70]	-	6640.8	Eu	2	-	-	Kn
6668.920	Xe I	-	-	[150]	IMe	6653.33	Ra	-	-	[15]	-	6640.74	Sm	4 w	-	-	Kn
6668.91	Sm	3 wh	-	-	Kn	6652.77	Ce	5	-	-	-	6640.59	Te	-	-	[15]	Bl
6668.74	Lu	4	-	-	Me	6652.6	Au I	15	-	-	MI	6640.49	Sm	3	-	-	Kn
6668.60	Sm	2	-	-	Kn	6652.399	Re	80 W	-	-	-	6640.09	Gd	40	-	-	-
6668.317	Ir I	4	-	-	-	6652.29	Co I	3 h	-	-	-	6640.012	Ne I	-	-	[10]	Pa
6668.27	A I	-	-	[8]	-	6652.239	Kr I	-	-	[40]	-	6639.81	Sm	4	-	-	Kn
6667.93	Ho	2	-	-	Ed	6652.1	bh F	100	-	-	Me	6639.72	A II	-	-	[20]	Rt
6667.90	Dy	8	-	-	Ks	6652.093	Ne I	-	-	[150]	-	6639.5	Hg	-	-	[10]	Lf
6667.85	Yb	1000	20	-	Me	6651.886	Cr	8	-	-	Ss	6639.41	Ta	2	-	-	Ks
6667.83	Sm	2	-	-	Kn	6651.61	Sm II	80 d	-	-	Kn	6638.8	bh F	30	-	-	L
6667.694	Ir I	5	-	-	-	6651.5	bh Ti	5	-	-	L	6638.49	Sm	15 d	-	-	Kn
6667.60	Co	5 r	-	-	Me	6651.423	Ce	10	-	-	-	6638.24	A II	-	-	[30]	Rt
6667.22	Sm II	50 d	-	-	Kn	6651.08	Gd	15	-	-	Ks	6637.962	Nd	25	-	-	-
6667.13	Se	-	-	[15]	Bl	6650.888	Ce	8	-	-	-	6637.62	Er	4	-	-	Ed
6666.965	Xe I	-	-	[60]	IMe	6650.81	I I	-	-	[30]	-	6637.31	Tm	15	-	-	Me
6666.893	Ne I	-	-	[100]	Ps	6650.801	La I	100	-	-	-	6637.23	Nd	20 w	-	-	Me
6666.548	Ti I	30	-	-	-	6650.62	Yt I	15	4	-	-	6637.191	Re	15	-	-	-
6666.36	A II	-	-	[10]	Rt	6650.57	Nd	10	-	-	Ks	6637.17	Sm II	60 d	-	-	Kn
6666.24	Cr	8	-	-	-	6650.39	F I	-	-	[40]	-	6637.165	Mo	8	-	-	-
6666.00	In II	-	-	[5]	Ps	6650.375	Mo	80	6	-	-	6637.01	N I	-	-	[50]	Du
6665.970	I II	-	-	[70]	Ke	6649.97	Co I	5	-	-	Me	6637.00	Te	-	-	[50]	Bl
6665.68	Ce	10	-	-	-	6649.72	Te	-	-	[30]	-	6636.531	La	1	3	-	-
6665.29	Re	25 w	-	-	Me	6649.703	Mo	7	-	-	-	6636.51	Yt I	8	-	-	-
6665.29	Co I	4	-	-	-	6649.5	bh Zr	2	-	-	L	6636.6	bh F	30	-	-	L
6664.85	Xe	-	-	[4]	Me	6649.35	Mo	5	-	-	-	6636.38	Hf	2	-	-	Me
6664.61	Nd	8	-	-	Kn	6649.22	Cu II	-	-	2	-	6636.36	Sm	2	-	-	Kn
6664.42	Yt I	6	3	-	-	6649.02	Sm II	50	-	-	Kn	6636.22	Sm	10	-	-	Kn
6664.14	Ru	5	-	-	-	6648.75	Xe I	-	-	[3]	-	6635.15	Ni I	5 h	-	-	-
6664.02	A I	-	-	[100]	Ms	6648.7	bh F	100	-	-	L	6635.12	Co I	25 h	-	-	-
6663.72	Co I	3 h	-	-	-	6648.52	Te	-	-	[100]	-	6634.7	Cu I	3 h	-	-	Ks
6663.446	Fe I	70	25 h	-	S	6648.312	Pt	10	-	-	-	6634.63	Sb	2 wh	-	-	Wt
6663.139	Ru	100	-	-	-	6648.3	Eu	2	-	-	Kn	6634.36	Kr II	-	-	[15 h]	Me
6662.86	Pd I	4	-	-	Me	6648.134	Sb	3	-	-	Wt	6634.35	Gd	150	-	-	Ks
6662.55	Ce	4	-	-	-	6648.12	Sm I	3	-	-	Kn	6634.3	bh Ti	2	-	-	L
6662.30	Ta	10 w	-	-	-	6647.94	Kr I	-	-	[3]	-	6634.22	Au	2	-	-	Qi
6662.274	Th	10	-	-	-	6647.80	Ni	5 l	-	-	Me	6634.13	Xe II	-	-	[10 whl]	Hu
6662.14	I	-	-	[100]	Ev	6647.44	Sb	-	-	[60]	-	6633.94	I	-	-	[30]	Bl
6661.81	Os	2	-	-	-	6647.43	Se	-	-	[15]	-	6633.772	Fe I	60 h	-	-	25 Wh
6661.69	Dy	5	-	-	Ks	6647.38	Ce	2	-	-	-	6633.1	Sm	10 d	-	-	Kn
6661.68	Cl II	-	-	[75]	Ks	6647.119	Pr	5	-	-	-	6632.7	bh F	300	-	-	-
6661.63	Sm	5	-	-	Kn	6647.06	Hf II	30	100	-	Me	6632.464	Xe I	-	-	[50]	IMe
6661.41	Ce	8	-	-	-	6646.84	Gd	10	-	-	Ks	6632.445	Co I	150	-	-	-
6661.399	La I	70	-	-	-	6646.7	Hg II	-	-	[10]	-	6632.44	Xe	-	-	[3]	Hu
6661.39	Ni I	2 h	-	-	-	6646.564	Cs	-	-	[15]	-	6632.28	Sm II	100	-	-	Kn
6661.37	Sm	5	-	-	Kn	6646.52	N I	-	-	[15]	-	6632.13	Rh I	3	-	-	Me
6661.16	I	-	-	[100]	Ev	6646.22	Sm	10 d	-	-	Kn	6632.04	A I	-	-	[8]	Ms
6661.076	Cr I	100	-	-	-	6645.95	Ra	-	-	[15]	-	6632.04	Pr	2	-	-	Ed
6661.06	Te	-	-	[30]	Bl	6645.41	Tb	4	-	-	-	6631.85	Cu II	-	-	2	Sh
6661.0	bh Sc	7	-	-	Me	6645.4	bh F	80	-	-	L	6631.64	Br I	-	-	[200]	Ks
6660.99	Cu II	-	-	8	Sh	6645.33	Co I	4 h	-	-	-	6631.3	bh C	-	-	-	L
6660.84	Cb	300	-	-	Me	6645.3	bh Zr	2	-	-	L	6631.3	bh Yt	2	-	-	Me
6660.76	Se	-	-	[50]	Bl	6645.18	Gd	150	-	-	Ed	6631.206	La I	3	-	-	-
6660.64	A I	-	-	[100]	Ms	6645.160	La I	8	-	-	-	6630.61	Sm II	50 d	-	-	Kn
6660.0	Pb II	-	-	[500]	Ea	6645.15	Eu	1000	-	-	-	6630.5	N II	-	-	[15]	Fl
6659.80	Te	-	-	[15]	Bl	6645.1	bh Sc	6	-	-	Me	6630.44	Xe I	-	-	[2]	Me
6659.630	Mo	20	2	-	-	6645.02	Re	25	-	-	Sj	6630.160	U	-	-	-	-
6659.40	Hf	1	5	-	Me	6645.01	Rh I	2	-	-	Me	6630.16	Rh I	40	-	-	-

6630.1—5952.5 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
6630.138	Nd	30	-	-	6616.80	Sm	6	-	Kn	6604.853	A I	-	[30]	Ms
6630.015	Cr	50	-	-	6616.75	Er	8	-	Ed	6604.61	Cl I	-	[5]	Ks
6629.71	Sm	2	-	Kn	6616.698	Cb	6	2	-	6604.6	bh F	30	-	Ms
6629.67	Cu I	3	-	Me	6616.650	Pr	35	-	-	6604.60	Sc II	12	-	Me
6629.52	Ni	2	-	-	6616.6	bh F	100	-	L	6604.56	Sm II	200 d	-	Kn
6629.48	Sb II	-	[2]	Lg	6616.577	La I	125	-	-	6604.44	Nd	8 d	-	Ks
6629.4	bh F	200	-	-	6616.14	Hf	2	4	Me	6604.05	U	6	-	-
6629.11	Cb	2	10 h	Me	6616.09	Re	25	-	Sj	6604.02	A I	-	[2]	Ms
6628.99	Ho	10	-	Ed	6615.88	Nd	5	-	Ks	6603.7	Eu	5 W	-	Kn
6628.932	Ce	10	-	-	6614.96	Xe II	-	[10 wh]	Hu	6603.694	Nd	3	-	-
6628.88	Sm II	50 d	-	Kn	6614.91	Dy	2	-	Ks	6603.60	Eu	80	-	Kn
6628.7	Te I	-	[5 w]	Rd	6614.82	Sm II	50 d	-	Kn	6603.53	Sm	4	-	Kn
6628.654	Ca I	35	12	Ms	6614.56	Os	3	-	-	6603.336	U	3	-	-
6628.42	Gd	10 h	-	Ks	6614.5	Cl	-	[10]	Mj	6603.27	Zr I	20	-	Ks
6628.413	La I	5	-	-	6614.153	Cb	25	8	-	6603.04	Te	-	[5]	Bl
6628.17	Re	25	-	Sj	6613.74	Yt II	15	12	-	6602.907	Ne I	-	[100]	Ps
6627.96	Kr II	-	[2 hl]	Me	6613.6	bh F	80	-	L	6602.90	Kr II	-	[10 h]	Me
6627.83	Sm	4	-	Kn	6613.4	Te I	-	[18 l]	Rd	6602.87	Xe I	-	[4 h]	Me
6627.80	Rh I	30	-	Me	6613.31	Xe	-	[4 h]	Hu	6602.684	U	2	-	-
6627.62	O II	-	[30]	Mh	6613.124	Ru	4	-	-	6602.4	Hg	-	[10]	Lf
6627.566	Fe I	4 h	8 wh	-	6613.1	bh Zr	3	-	L	6601.83	Sm II	150 d	-	Kn
6627.41	Sm	5	-	Kn	6613.03	Rn I	-	[6]	Ra	6601.8	bh F	20	-	L
6627.29	Tm	10	-	Me	6612.60	Sm	4	-	Kn	6601.756	Nd	10	-	-
6627.23	Rn I	-	[30]	Ra	6612.548	Re	2	-	-	6601.458	U	2	-	-
6627.12	In II	-	[20 h]	Pa	6612.44	La	6	-	-	6601.2	Eu	2 W	-	Kn
6626.976	Cb	6	2	-	6612.180	Cr I	12 l	-	-	6601.10	Er	12	-	Ed
6626.96	Sm	2	-	Kn	6612.17	Er	4	-	-	6600.8	bh Sc	10	-	Me
6626.18	Ta	3 h	-	-	6612.06	Ce	8	-	-	6600.60	Gd	8	-	Ks
6626.1	Eu	2	-	Kn	6612.04	Lu	10	-	Me	6600.39	Sm	3	-	Kn
6626.1	bh F	200	-	L	6611.988	Nd	8	-	-	6600.2	Bi II	-	70	Cf
6626.1	bh Ti	2	-	-	6611.95	Lu	15	-	Me	6600.168	La I	40	-	-
6625.284	U	2	-	-	6611.95	Ta	300	-	-	6599.90	Zr I	4	-	-
6625.28	Sm	30 d	-	Kn	6611.80	Lu	20	-	Me	6599.76	Hf II	1	4	Me
6625.28	Pd I	4	-	Me	6611.71	Lu	100	150	Me	6599.68	Cu I	25	-	Az
6624.849	V I	12	[7]	-	6611.585	Re	3	-	-	6599.61	Ce	6	-	Kn
6624.731	Ir	15	-	-	6611.58	Lu	25	-	Me	6599.47	Ra I	-	[30]	Ra
6624.573	Mo	15	2	-	6611.48	Sb	6	-	Wt	6599.41	Br	-	[15]	Bl
6624.29	Cu II	-	8	Sh	6611.28	Lu	30	-	Me	6599.3	bh C	-	-	L
6624.26	Nd	4	-	Ka	6611.203	Mo	20	-	-	6599.112	Ti I	100	-	-
6624.22	Kr II	-	[2 hl]	Me	6610.58	N II	-	[100]	Fl	6598.9529	Ne I	-	[1000]	S
6623.981	Re I	30 w	-	-	6610.5	bh F	50	-	L	6598.95	Sm	2	-	Kn
6623.791	Co	70 W	-	-	6610.5	bh Yt	4	-	Me	6598.842	Zr I	6	-	-
6623.78	A I	-	[4]	Ra	6610.36	Sb	4	-	-	6598.84	Xe II	-	[50]	Hu
6623.7	Eu	2	-	Kn	6610.05	Gd	15	-	Ks	6598.66	A I	-	[6]	Ms
6623.541	V I	2	-	-	6610.03	Mn	2	-	Si	6598.594	Ni I	5 h	-	-
6623.26	Pd I	4	-	Me	6610.0	bh Sc	8	-	Me	6598.24	Mn	2 h	-	-
6623.004	Ce	5	-	-	6609.850	Pr	4	-	-	6597.93	Pt	4	-	Me
6622.9	bh F	200	-	L	6609.8	Hg II	-	[5]	Ps	6597.607	Fe	10	-	Bu
6622.815	U	3	-	-	6609.685	Nd	5	-	-	6597.556	Cr	40	-	-
6622.67	Sm	4	-	Kn	6609.305	Nd	4	-	-	6597.25	Xe II	-	[200]	Hu
6622.53	N I	-	[30]	Du	6609.30	Cl	-	[5]	Ks	6597.03	Sm	40	-	Kn
6622.49	I II	-	[30]	Bl	6609.20	Hf II	1	8	Me	6596.712	Zr I	4	-	-
6622.47	Yt I	3	-	-	6609.116	Fe I	25	12 h	-	6596.584	Ru	4	-	-
6622.27	Gd	15	-	Ks	6608.894	Cr	25	-	-	6596.32	Te	-	[30]	Bl
6621.771	U	6	-	-	6608.87	Xe I	-	[10]	Me	6596.10	A I	-	[8]	Ms
6621.680	W	5	-	-	6608.86	Sm	3	-	Kn	6596.00	Sm	10	-	Kn
6621.62	Ru	4	-	-	6608.52	Re	25	-	Sj	6595.93	Rn I	-	[10]	Ra
6621.61	Cu I	20	-	Me	6608.4	Sm	3	-	Kn	6595.905	Co I	150	-	-
6621.30	Ta	200	-	-	6608.257	La I	50	-	-	6595.561	Xe I	-	[100]	IMe
6621.3	Eu	2	-	Kn	6607.831	V I	3	-	-	6595.470	Pr	3	-	-
6621.28	Sb II	-	[4]	Lg	6607.749	La I	3	-	-	6595.4	Eu	2	-	Kn
6621.24	Ni I	2 h	-	Me	6607.6	bh F	30	-	L	6595.38	Co	4	-	Si
6621.01	A	-	[4]	Rt	6607.47	Ho	4	-	Ed	6595.32	Ba I	1000	300	-
6620.558	Zr I	6	-	-	6607.41	Xe I	-	[30 h]	Me	6595.013	Nd	5	-	-
6620.524	U	15	-	-	6607.276	Cb	15	4	-	6595.01	Xe	-	[400]	Hu
6620.50	Br I	-	[10]	Ks	6607.17	Tb	6	-	Ed	6595.00	K II	-	[5]	Bn
6620.02	Xe II	-	[100]	Hu	6607.17	Sm	15	-	-	6594.675	Cr	60 wh	-	-
6619.903	Ir	4	-	-	6607.07	Yb	20	-	Me	6594.66	A I	-	[2]	Ms
6619.877	Th	3	-	Fd	6606.856	Ce	4	-	-	6594.56	Rn I	-	[10]	Ra
6619.8	bh F	150	-	L	6606.43	Rn I	-	[20]	Ra	6594.3	Hg	-	[10]	Lf
6619.69	I I	-	[200]	Ev	6606.33	Ce	10	-	Kn	6594.16	Dy	3	-	Ks
6619.354	Nd	10	-	-	6606.3	Te I	-	[7]	Rd	6593.96	Th	5	-	Fd
6619.28	Eu	5 W	-	Kn	6606.158	Cb	15	4	-	6593.878	Fe I	30	18	-
6619.130	Mo	300	15	-	6605.970	V I	3	-	-	6593.82	Eu	400	-	-
6619.01	Sm II	5 Wh	-	Kn	6605.93	Yb	-	4 h	Me	6593.745	Ru	15	-	-
6618.529	Nd	8	-	-	6605.85	Ta	3	-	-	6593.52	Er	4	-	Ed
6618.41	I II	-	[2]	Mu	6605.53	Mn	30 h	-	Si	6593.467	La I	25	-	-
6618.40	Xe II	-	[30]	Hu	6605.432	Th	5 h	-	Fd	6593.40	Gd	8	-	-
6618.195	Ru	20	-	-	6605.386	Ce	3	-	-	6593.34	Ra II	-	[500]	Ra
6617.9	bh Sc	8	-	Me	6605.19	Re I	100 W	-	Me	6593.03	Sm	4	-	Kn
6617.61	Sm II	50 d	-	Kn	6605.12	Kr I	-	[2]	Me	6592.919	Fe I	150	80	S
6617.526	Co I	30	-	Si	6605.00	Kr II	-	[15]	Me	6592.66	Nd	2	-	Kn
6617.259	Sr I	150	-	-	6604.97	Er	4	-	Ed	6592.65	Pt	4	-	Me
6617.118	Co I	30	-	Si	6604.97	Tm	300	60	Me	6592.54	Re I	60 w	-	-
6617.06	Yb	10	6	Me	6604.94	Ho	20	-	Ed	6592.517	Ni I	5 h	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
6591.988	Zr I	30	-	-	-	6578.16	In	-	12	-	Sq	6564.26	Ta	20 h	-	-	-
6591.808	Co I	15	-	-	Sl	6578.03	C II	-	500	-	Fl	6564.052	Sb	6	-	-	Wt
6591.60	Gd	40	-	-	-	6578.001	Pr	3	-	-	-	6563.95	Te	-	-	[50 h]	Bl
6591.50	Sm	40	-	-	Kn	6577.732	Nd	4	-	-	-	6563.927	Nd	4 h	-	-	-
6591.480	Th	8	-	-	Fd	6577.552	Ta	4	-	-	-	6563.701	Ta	2	-	-	-
6591.44	Pd I	3	-	-	Me	6577.470	Ce	3	-	-	-	6563.66	Gd	6	-	-	Ks
6591.429	Nd	5	-	-	-	6577.36	Sm	25	-	-	Kn	6563.52	Sm	20	-	-	Kn
6591.4	bh Yt	2	-	-	Me	6577.203	Th	4	-	-	Fd	6563.421	Co I	200 w	5	-	-
6591.00	Cb	20	10	-	Me	6577.2	Bi II	2 h	20	-	Cf	6563.24	Sn	-	-	50 Wh	Ar
6590.945	Nd	3	-	-	-	6577.151	Re I	50 W	-	-	-	6563.224	W	2	-	1	-
6590.897	Mo	12	-	-	-	6577.144	Ta	5	-	-	-	6563.19	Xe II	-	-	[15]	Hu
6590.88	Se	-	[8]	-	Bl	6576.885	Yt I	10	6	-	-	6562.94	Sm	50 d	-	-	Kn
6590.86	Xe I	-	[8]	-	Me	6576.828	Os	3	-	-	-	6562.86	Hf II	2	-	10	Me
6590.395	Mo	3	-	-	-	6576.558	Zr I	6	-	-	-	6562.849	H	-	-	[2000]	Ms
6590.20	Sm	3	-	-	Kn	6576.42	Kr I	-	[20]	Me	-	6562.725	H	-	-	[1000]	Ms
6590.052	U	5	-	-	-	6576.38	Ni	2	-	-	-	6562.64	Sm	2	-	-	Kn
6589.73	Sm II	400 d	-	-	-	6575.95	Sm	25	-	-	Kn	6561.60	Ta	40	-	-	-
6589.639	Nd	10	-	-	-	6575.935	Nd	4	-	-	-	6561.18	Eu	6 W	-	-	Kn
6589.067	Nd	5	-	-	-	6575.9	bh Sc	10	-	-	Me	6560.87	I I	-	-	[30]	Ev
6588.92	Sm	100	-	-	-	6575.56	Tm	20	-	-	Me	6560.837	Rb	-	-	150	Rr
6588.540	Th	10	-	-	Fd	6575.180	Ti I	20	-	-	-	6560.747	Pr	4	-	-	-
6588.41	Sm	8	-	-	Kn	6575.022	Fe I	12 h	15 h	-	-	6560.68	Si I	2 h	-	-	Ks
6588.204	Ir	5	-	-	-	6574.84	Ta	200	-	-	-	6560.65	Xe I	-	-	[4 h]	Me
6588.033	Nd	6	-	-	-	6574.73	Cb	12	-	Me	-	6560.450	Ru	9	-	-	-
6587.834	U	2	-	-	-	6574.50	Te	-	[30]	Bl	-	6560.292	Nd	5	-	-	-
6587.75	C I	-	[50]	-	En	6574.38	Sm II	100	-	Kn	-	6560.13	He II	-	-	[100]	Ps
6587.54	Sm	30 d	-	-	Kn	6573.948	W	2	1	-	-	6559.97	Xe I	-	-	[25]	Me
6587.23	Hf	5	10	-	Me	6573.80	Gd	10	-	-	Ks	6559.81	Br I	-	-	[150]	Ks
6587.16	Ta	5 h	-	-	-	6573.68	Xe II	-	[30]	Hu	-	6559.580	Ti II	8	-	-	-
6587.0	Eu	2 W	-	-	Kn	6573.03	Sm	10	-	Kn	-	6559.336	Ce	3	-	-	-
6586.506	Cs I	500	-	[5]	Ms	6572.900	Cr I	25	-	-	-	6559.271	Ta	3 l	-	-	-
6586.42	Sm	2	-	-	Kn	6572.9	Eu	3	-	Kn	-	6558.966	Nd	5	-	-	-
6586.343	Mn	20 h	-	-	Sl	6572.781	Ca I	50	-	IWg	-	6558.7	Pb II	-	-	[15]	Ea
6586.328	Ni I	40	-	-	-	6572.651	Nd	8	-	-	-	6558.39	Sm	3	-	-	Kn
6586.019	Cs	35	-	-	Ms	6572.58	Yt	3	6	-	-	6558.17	Sm	10	-	-	Kn
6585.706	Nd	8	-	-	-	6572.5	bh Yt	6	-	Me	-	6558.150	Sb	12	-	-	Wt
6585.42	Yb	7	20	-	Me	6572.35	Sm	2	-	Kn	-	6558.05	Se I	5	-	-	Me
6585.41	Ra	-	[50]	-	Rs	6571.864	Nd	5	-	-	-	6558.020	V I	3	-	-	-
6585.21	Sm II	150 d	-	-	Ks	6571.37	A I	-	[2]	Ms	-	6558.02	Dy	3	-	-	Ks
6585.200	U	2	-	-	-	6571.35	Br I	-	[5]	Ks	-	6557.91	Hf II	10	100	-	Me
6585.190	I II	-	[70]	-	Ke	6571.088	Mo	5	2	-	-	6557.8	bh Sc	10	-	-	Me
6585.13	Ta	5	-	-	-	6571.044	Pr	2 h	-	-	-	6557.78	Er	6	-	-	Ed
6584.93	Te	-	[30]	-	Bl	6570.960	La II	5	-	-	-	6557.65	Re	4 h	-	-	Me
6584.9	bh Zr	2	-	-	L	6570.834	Mn	2	-	-	-	6557.581	U	5	-	-	-
6584.84	Yt I	3	-	-	-	6570.81	I I	-	[30]	Bl	-	6557.49	Rn I	-	-	[20]	Rs
6584.6	Hg	-	[10]	-	Lf	6570.760	Eu	15	-	Kn	-	6557.39	Yt I	2	6	-	-
6584.59	Nd	5	-	-	Ks	6570.67	Sm II	200 d	-	Kn	-	6557.151	Re I	10 w	-	-	-
6584.53	Hf II	4	40	-	Me	6570.07	Kr II	-	[150]	Me	-	6557.00	Hf	2	2	-	Me
6584.14	Sm	15	-	-	Kn	6569.776	Mo	10	2	-	-	6556.92	Cb	6	2	-	Me
6583.907	Th	10	-	-	Fd	6569.69	F I	-	[50]	En	-	6556.902	Ta	2 h	-	-	-
6583.81	I	-	[70]	-	Ke	6569.56	Nd	5	-	-	Ks	6556.70	Xe II	-	-	[5]	Hu
6583.54	Eu I	8	-	-	Az	6569.427	Zr I	8	-	-	-	6556.50	Hf	5	-	10	Me
6583.46	Er	10	-	-	Ed	6569.4	Pb II	-	[25]	-	-	6556.46	Sm	3	-	-	Kn
6583.27	Xe I	-	[20]	-	Me	6569.31	Sm II	500 d	-	Kn	-	6556.31	Er	6	-	-	Ed
6582.87	I I	-	[20]	-	Ke	6569.27	I I	-	[5]	Db	-	6556.066	Ti I	150	-	-	IKs
6582.85	C II	-	200	-	Fl	6569.23	Mn	2	-	Sl	-	6555.98	Hf	1	3	-	Me
6582.82	In	-	5	-	Sq	6569.224	Fe I	50	25 h	-	-	6555.95	La I	5	-	-	Ks
6582.782	U	4	-	-	-	6569.13	Xe II	-	[8]	Hu	-	6555.70	Ti II	-	-	[5]	El
6582.617	Nd	3	-	-	-	6568.469	Nd	5	-	-	-	6555.69	Kr I	-	-	[6]	Me
6582.191	La I	8	-	-	-	6567.98	Gd	25	-	-	Ks	6555.670	Ce	15	-	-	-
6582.19	Br I	-	[100]	-	Ks	6567.87	Eu	600	-	-	-	6555.625	Rb II	-	-	100	Lp
6581.82	Tb	6	-	-	Ed	6567.73	Cd II	7	3	-	Vs	6555.56	Kr I	-	-	[2]	Me
6581.68	I	-	[15]	-	Bl	6567.53	Br	-	[25]	Bl	-	6555.24	Sm	3 d	-	-	Kn
6581.60	A I	-	[2]	-	Ms	6567.50	Sm	3	-	Kn	-	6555.118	La I	4	-	-	-
6581.25	Sm	4	-	-	Kn	6567.39	Hf II	6	60	Me	-	6555.05	Cu II	-	-	5	Sh
6581.15	Hf	2	2	-	Me	6567.079	Co	2 h	-	-	-	6555.014	U	15	-	-	-
6581.1	bh Mg	3	-	-	L	6566.9	bh Sc	10	-	Me	-	6554.678	Re	3	-	-	-
6580.943	Nd	10	-	-	-	6566.747	Pr	20 W	-	-	-	6554.226	Ti I	125	-	150	IKs
6580.913	Cr I	30	-	-	-	6566.48	I I	-	[400]	Ke	-	6554.196	Xe I	-	-	[50 hl]	IMe
6580.73	Ba	20 h	-	-	Me	6566.26	Tm	10	-	Me	-	6554.148	Th	5	-	-	Fd
6580.58	I	-	[15]	-	Ev	6565.91	Ba	3	-	Lr	-	6553.8	bh Yt	8	-	-	Me
6580.53	Sm	15	-	-	Kn	6565.88	V I	3	-	Me	-	6553.66	Xe I	-	-	[4]	Me
6580.38	F I	-	[30]	-	En	6565.76	Hf II	-	-	3	Me	6553.6	Hg	-	-	[10]	Lf
6580.22	Ni	2 h	-	-	-	6565.62	Ti I	50	-	-	-	6553.5	Te I	-	-	[12 l]	Rd
6579.640	Nd	3	-	-	-	6565.54	Cu I	15	-	Me	-	6553.301	Pr	4 w	-	-	-
6579.38	Dy	8	-	-	Ks	6565.434	La I	15	-	-	-	6553.070	Nd	8	-	-	-
6579.37	Co I	15	-	-	-	6565.32	Kr II	-	[6 h]	Me	-	6552.92	Hf	1	3	-	Me
6579.26	Sn	-	15 wh	-	Ar	6565.17	Dy	3	-	Ks	-	6552.84	U	3	-	-	Me
6579.249	Sm	4	-	-	-	6565.04	S	-	[15]	Bl	-	6552.63	Ti II	200	-	[10]	El
6579.20	Br I	-	[20]	-	Ks	6564.80	I	-	[30]	Bl	-	6552.596	Mo	5	-	-	-
6579.110	Ce	8	-	-	-	6564.78	Gd	25	-	-	Ks	6552.27	Rn I	-	-	[6]	Rs
6578.94	Ta	2	-	-	-	6564.69	Sm	2 d	-	-	-	6552.263	Ir I	3	-	-	-
6578.63	Te	-	[15]	-	Bl	6564.632	Fr	10	-	1	-	6552.010	Mn	3	-	-	Sl
6578.513	La I	100	-	-	-	6564.60	Cu II	-	-	10	Sh	6551.80	Sm II	25	-	-	Kn
6578.2	bh Zr	4	-	-	L	6564.33	Ba I	3	-	-	Me	6551.722	Ce	15	-	-	-

6551.6—6512.0 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
6551.61	Cb	6 p	1		Me	6538.14	Gd	50	-	-		6525.6	bh Sc	15	-	-	Me
6551.58	Cu II	-	2		Sh	6538.136	W	2	1			6525.52	Sm	4	-	-	Kn
6551.44	Co I	80 w	-		-	6538.115	A I	-	[30]	Ms		6525.326	Ce	5	-	-	
6551.19	Tm	10	-		Me	6537.97	S I	-	[3]	Fh		6524.80	I II	-	[2]	-	Mu
6551.04	Sm	5	-		Kn	6537.95	Cr I	35	-	Me		6524.2	bh F	150	-	-	L
6550.98	Cu I	3	-		Me	6537.621	Mo	6	2	-		6524.12	Cu II	-	-	2	Sh
6550.97	Hf	20	-		Ed	6537.61	Sm	3	-	Kn		6523.94	Hf	1	-	3	Me
6550.58	I I	-	[5]		Db	6537.515	Sm	5 w	-	-		6523.86	La I	3	-	-	Me
6550.540	Zr I	18	-		-	6537.476	Ce	2	-	-		6523.85	Se II	-	[10]	-	Bt
6550.255	Sr I	100	10	-	-	6537.06	Hf	2	5	Me		6523.453	Pt	80	-	-	-
6550.191	Nd	8 wh	-		-	6537.01	Ta	-	[100]	Bl		6523.18	Lu	80	5	-	Me
6550.19	Yb	10	-		Me	6536.83	Sm	10 h	-	Kn		6523.151	Nd	10	-	-	
6550.01	Hf II	1	10		Me	6536.67	S I	-	[15]	Fh		6522.90	Er	4	-	-	Ed
6549.880	U	4	-		-	6536.58	U	2	-	-		6522.76	Fu	25	-	-	
6549.77	Sm II	100 d	-		Kn	6536.56	Hf	2	5	Me		6522.67	E	-	[2]	-	Gl
6549.77	Ti I	300	50 hl		Ps	6536.55	Kr I	-	[8]	Me		6522.55	Ce	3	-	-	Kn
6549.7	bh Zr	2	-		L	6536.440	Ca II	-	[15]	Lp		6522.38	Cl II	-	[10]	-	Ks
6549.542	Nd	10	-		-	6536.41	S I	-	[45]	Fh		6521.508	Xe I	-	[40]	-	Ime
6549.35	I	-	[30]		Bl	6536.307	Mo	7	-	-		6521.45	I	-	[15]	-	Bl
6549.24	Gd	25	-		-	6535.8	bh Yt	10	-	Me		6521.13	Hg II	-	[12]	-	Ps
6549.185	La I	3	-		-	6535.63	S I	-	[8]	Fh		6520.982	U	4	-	-	
6549.14	Eu	20 W	-		Kn	6535.457	U	4	-	-		6520.855	Os	2	-	-	
6548.72	Hf	1	10		Me	6535.35	Sm	5	-	Kn		6520.8	bh F	100	-	-	L
6548.28	Dy	3	-		Ks	6535.3	bh Sc	10	-	Me		6520.770	La I	15	-	-	
6548.24	Hf II	2	3		Me	6535.13	Co I	2 h	-	-		6520.51	Er	6	-	-	Ed
6548.14	Br I	-	[20]		Ks	6535.029	Yt	4	6	Ks		6520.40	Sm	3	-	-	Kn
6547.28	Gd	6	-		Ks	6534.95	Se II	-	[300]	Mz		6520.279	Nd	5	-	-	
6547.24	Ta	5	-		Ks	6534.64	Pr	3 w	-	Ed		6520.02	Br	-	[15]	-	Bl
6546.94	I II	-	[5]		Mu	6534.598	U	3	-	-		6519.858	Nd	10	-	-	
6546.86	Sb II	4	[2]		Lg	6534.501	Ce	5	-	-		6519.836	Mo	25	6	-	
6546.791	Sr I	25	5		-	6534.44	Se	-	[125]	Ms		6519.71	Er	4	-	-	Ed
6546.59	Te	-	[5]		Bl	6534.08	Mn	10 h	-	Si		6519.703	Rh I	40	-	-	
6546.276	Ti I	80	-		IKs	6533.97	Fe	-	3 h	Bu		6519.60	Eu	500	-	-	
6546.245	Fe I	150	50		S	6533.96	Sm	15	-	Kn		6519.371	Mn	20	-	-	
6546.12	Xe I	-	[20]		Me	6533.7	bh C	-	-	L		6519.343	La I	6	-	-	
6546.02	Hf	2	5		Me	6533.494	Mn	20	-	-		6519.18	Dy	3	-	-	Ks
6545.93	Ra	-	[30]		Rs	6533.159	Xe I	-	[100]	Ime		6518.945	U	15	-	-	
6545.740	Re	6 h	-		-	6533.139	Os	3 h	-	-		6518.92	Er	4	-	-	Ed
6545.725	U	2	-		6533.1	Pb II	-	[20]	-	Ea		6518.86	I, II	-	[5]	-	Bl
6545.44	Mg II	10	2		Lr	6533.0	N II	-	[5]	Fl		6518.807	Pr	4	-	-	
6545.11	A	-	[2]		Ms	6532.96	Eu	4 W	-	Kn		6518.753	Mn	20	-	-	
6545.04	Se	-	[4]		Bl	6532.891	Ni I	3	-	-		6518.68	Tb	6	-	-	Ed
6544.95	Sm	10	-		Kn	6532.8824	Ne I	-	[100]	S		6518.374	Fe I	10 h	7 h	-	
6544.933	Re	15	-		-	6532.417	W	2	-	-		6518.3	bh Yt	15	-	-	Me
6544.89	Ba	5	-		Lr	6532.25	Sm	15	-	Kn		6518.2	Pb II	-	[35]	-	Ea
6544.66	Sm	40	-		Kn	6532.08	Ra I	-	[30]	Rs		6517.88	I I	-	[30]	-	Bl
6544.61	Cb	80	10		Me	6531.66	Hf II	2	30	Me		6517.72	Gd	12	-	-	Ks
6544.61	Br I	-	[100]		Ks	6531.43	Cl I	-	[15]	Ks		6517.713	Ti	2	-	-	Bh
6544.57	Sm II	40	-		Kn	6531.428	V I	25	-	-		6517.7	bh Sc	6	-	-	Me
6544.51	Cu I	3	-		Me	6531.348	Th	15	-	Fd		6517.562	Rh I	8	-	-	
6544.25	Ru	5	-		-	6530.98	Gd	10	-	-		6517.5	bh F	100	-	-	L
6543.8	Eu	3 W	-		Kn	6530.74	Sm	10	-	Kn		6517.295	Ce	10	-	-	
6543.609	Ce	3	-		-	6530.677	Ce	6	-	-		6517.280	V II	-	10	-	Me
6543.511	V I	8	-	[5]	-	6530.606	Eu	6	-	Kn		6517.23	Gd	15	-	-	Sq
6543.360	Xe I	-	[40]		Ime	6530.30	Cu II	-	8	Sh		6517.22	In	-	5	-	
6543.29	Sm	40	-		Kn	6530.2	Au I	5	-	MI		6517.145	Pr	3	-	-	
6543.151	La I	125	-		-	6530.01	Gd	10	-	Ks		6517.10	Sb	4	-	-	Wt
6543.143	Ti	8	-		Bh	6529.88	Sb II	4	[4]	Lg		6517.00	Co I	3 h	-	-	
6543.0	bh Zr	10	-		L	6529.731	La II	4	2 h	-		6516.88	Se	-	[3]	-	Bl
6542.969	U	8	-		-	6529.70	Sm	50	-	Kn		6516.82	Sm	4 h	-	-	Kn
6542.80	Hf II	3	50		Me	6529.225	Re	4	-	-		6516.19	I II	-	[10]	-	Ke
6542.76	Sm II	200	-		Kn	6529.197	Cr	40 h	-	HI		6516.17	Sm	10	-	-	Kn
6542.42	Cl	-	[5]		Ks	6528.98	Sm	5	-	Kn		6516.099	Ta	200	-	-	
6542.04	Gd	5	-		Ed	6528.92	Ra I	-	[15]	Rs		6516.053	Fe II	-	20	-	Kn
6541.99	Br	-	[15]		Bl	6528.871	Os	2	-	-		6516.026	Cr	5 h	-	-	HI
6541.93	Cu II	-	2		Sh	6528.744	Ru	25	-	-		6515.256	Re	20	-	-	
6541.89	Te	-	[30]		Bl	6528.65	Xe II	-	[100]	Hu		6515.2	bh Zr	4	-	-	L
6541.53	Er	6	-		Ed	6528.35	Te	-	[5]	Bl		6514.961	Nd	15	-	-	
6541.455	In II	-	[40]		Ps	6528.06	As	-	5	Ro		6514.65	Sm	5	-	-	Kn
6541.23	Se II	-	[15]		Bt	6528.02	Sm	3	-	Kn		6514.39	Ta	200	-	-	
6541.224	In II	-	[50]		Ps	6527.8	Pb II	-	[25]	Ea		6514.219	Gd	15	-	-	
6541.2	Hg	3	-	[5]	Lf	6527.634	Mo	4	-	Ed		6514.2	bh F	80	-	-	L
6541.13	Sm	2	-		Kn	6527.63	Tb	4	-	-		6513.84	A I	-	[8]	-	Ms
6541.073	Nd	3	-		-	6527.6	bh F	200	-	L		6513.60	Ce	8 w	-	-	Lf
6541.01	Hf	2	5		Me	6527.49	Si I	3 h	-	Ks		6512.95	Hg	-	[10]	-	
6540.959	In II	-	[60]		Ps	6527.314	Ba	200	20	IKs		6512.83	Xe II	-	[150]	-	Hu
6540.483	Pr	15 w	-		-	6527.038	U	6	-	-		6512.69	Sm II	15 d	-	-	Kn
6540.29	Ir	4	-		Me	6527.038	Ta	3	-	-		6512.680	Mo	3	2	-	
6540.236	Ru	15	-		-	6527.025	Ce	3 w	-	-		6512.61	Hf II	1	10	-	Me
6539.937	Nd	10 W	-		-	6526.986	La II	125	100	-		6512.42	As II	-	8	-	Ro
6538.601	Yt I	50	10		-	6526.64	Sm	50	-	Kn		6512.365	Th	3	-	-	Fd
6538.57	S	-	[60]		Fh	6526.54	Mn	10	-	-		6512.30	Sm	5	-	-	Kn
6538.40	Co	2 h	-		Me	6526.21	Gd	10	-	Ks		6512.19	Tb	4	-	-	Ed
6538.34	I	-	[70]		Bl	6526.20	Hf II	-	5	Me		6512.18	In	-	30	-	Sq
6538.295	Os	10	-		-	6526.078	U	6	-	-		6512.0	bh F	300	-	-	L

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
6511.62	Hf II	-	6	Me	6499.10	A I	-	[6]	Ms	6488.050	V I	2	[4]	-
6511.478	Re I	60	-	-	6499.01	Hg	-	[5]	Lf	6487.765	Xe I	-	[125]	IMe
6511.13	Sb	-	[10]	Lg	6499.0	bh F	80	-	L	6487.62	Sm II	60	-	Kn
6511.1	bh F	20	-	L	6498.951	Fe I	3 h	-	-	6487.531	Nd	5	-	-
6511.00	Th	4	-	-	6498.939	Pr	3	-	-	6487.32	Ra I	-	[1000]	Ra
6510.95	Kr II	-	[100]	Me	6498.762	Ba	60	20	IKs	6487.1	Cl	-	[10]	Mj
6510.782	U	2	-	-	6498.717	Xe I	-	[100]	IMe	6487.09	Te	-	[70]	Bl
6510.74	Re	2	-	Me	6498.67	Sm II	100 d	-	Kn	6487.028	U	2	-	-
6510.409	Rh I	25	-	-	6498.53	Dy	2	-	Ed	6486.98	Ir	8	-	Me
6510.14	Kr II	-	[8 h]	Me	6498.314	Rb	-	50	Rr	6486.9	bh F	20	-	L
6510.03	Sm	5	-	Kn	6498.188	La II	25	125	-	6486.64	Dy	6	-	Ks
6509.44	Sm	10	-	Kn	6497.91	Sm	15 d	-	Ab	6486.557	Pr	30	-	-
6509.20	Sr II	2 h	-	Sd	6497.85	Se II	-	[2]	Bt	6486.5	Hf	2	-	Me
6509.011	Ce	8	-	-	6497.84	Cb	12	2	Me	6486.35	So	2	-	Me
6508.742	Ca	2	-	Cw	6497.65	Bi II	2 h	12	Om	6486.060	Ta	3	-	-
6508.735	Co I	5 h	-	-	6497.689	Ti I	40	-	-	6485.97	Ce	5	-	Kn
6508.709	Ir	4	-	-	6497.43	Xe I	-	[30 hl]	Me	6485.87	Er	4	-	Ed
6508.7	bh F	200	-	L	6497.18	Pr	4 w	-	-	6485.832	Mo	10 h	5 w	-
6508.70	Gd	2	-	Ed	6496.94	Th	2	-	-	6485.687	Nd	20	-	-
6508.415	Pd I	6	-	-	6496.901	Ba	800 r	300 Wh	IKs	6485.660	Rh I	6	-	-
6508.37	Kr I	-	[3]	Me	6496.893	Co	3 h	-	Dn	6485.549	La I	50	-	-
6508.2	bh Zr	18	-	L	6496.456	Fe	10	-	Bu	6485.4	bh Se	20	-	Me
6508.135	Ti I	30	-	-	6496.439	Ru	25	-	-	6485.38	Ca	2 h	1	Ad
6507.9	bh F	20	-	L	6496.16	Sm	2	-	-	6485.38	U	2	-	-
6507.72	Tm	15	-	Me	6496.05	Sm II	10	-	Kn	6485.37	Ta	500	-	-
6507.700	Sm	15	-	Ks	6496.01	I I II	-	[15]	Bl	6485.18	Cu I	8	-	Me
6507.50	Xe	-	[3]	Me	6495.9	bh F	30	-	L	6484.88	N I	-	[500]	Du
6507.16	Ce	3	-	-	6495.9	bh Sc	15	-	Me	6484.6	bh Yt	10	-	Me
6507.13	Sm	40	-	Kn	6495.591	Nd	8	-	-	6484.52	Sm II	100	-	-
6506.5279	Ne I	-	[1000]	S	6495.528	Cs II	-	[15]	Lp	6484.46	Cu II	-	20	Sh
6506.360	Zr I	25	-	-	6495.45	Al II	-	[2]	Sy	6484.365	Nd	3	-	-
6506.32	U	2	-	Me	6495.35	U	2	-	Me	6484.35	Zr I	6	-	Ks
6506.211	La I	15	-	-	6494.985	Fe I	400	150	S	6484.32	Ge II	-	15	Lg
6506.14	Cu I	8	-	Az	6494.96	Sb	4	-	Kz	6484.0	bh F	10	-	L
6505.56	Sm	8 d	-	Kn	6494.899	Pr	4	-	-	6483.99	Gd	10	-	Ks
6505.516	Ta	100	-	-	6494.58	Hf	1	5	Me	6483.96	Sm	2	-	-
6505.5	bh F	100	-	L	6494.13	Gd	20	-	Ks	6483.86	As II	-	3	Ro
6505.41	Gd	15	-	Ks	6494.04	Cu II	-	30	Sh	6483.75	N I	-	[30]	Du
6505.404	Sb	6	-	Wt	6493.97	A I	-	[15]	Ms	6483.62	Dy	5	-	Ks
6504.9	N II	-	[15]	Fl	6493.92	Sm	3	-	Kn	6483.60	Br I	-	[5]	Ks
6504.89	Kr I	-	[10]	Me	6493.90	Eu	40	-	Kn	6483.6	bh Ti	2	-	L
6504.463	Nd	10	-	-	6493.780	Ca I	80	30	I	6483.445	Nd	5 h	-	-
6504.242	Co I	15	-	-	6493.776	Yt I	6	-	-	6483.37	Sm	4	-	-
6504.18	Xe I	-	[200 h]	Me	6493.738	Co	25	-	-	6483.27	Zn II	-	[30]	Pa
6504.166	V I	25	[9]	-	6493.7	Kr II	-	[2 h]	Me	6483.10	A II	-	[15]	Rt
6504.13	Ce	5	-	-	6493.494	Pr	5	-	-	6483.07	Eu	30	-	Kn
6504.095	Pr	4	-	-	6493.198	Th	2	-	Fd	6483.06	Se II	-	[200]	Bl
6503.995	Sr	35	20	-	6493.129	Mo	15	4	-	6482.98	Zn II	4	[15]	Vs
6503.63	Er	4	-	Ed	6493.10	Sm	3	-	Kn	6482.95	Gd	5 h	-	Ks
6503.59	U	15	-	Me	6493.098	Zr I	10	-	-	6482.912	Ba	100 Wh	50	IKs
6503.433	Ba	2	2	-	6493.05	Fe	-	8	Kn	6482.811	Ni I	35	-	-
6503.266	Ce	3	-	-	6492.9	bh F	30	-	L	6482.800	Co I	2 h	-	Si
6503.262	Zr I	20	-	-	6492.848	La I	10	-	-	6482.74	N I	-	[500]	Mt
6503.26	Sb II	-	[12]	Lg	6492.74	Yb	3	50	Me	6482.70	Se II	-	[4]	Kh
6503.1	bh Sc	4	-	Me	6492.490	Mo	10	2	-	6482.57	Hf	1	2	Me
6503.02	Yb	2	4	Me	6492.352	Er	12	-	-	6482.522	Ce	2	-	-
6502.88	Sb II	-	20	Kz	6492.348	Nd	12	-	-	6482.282	Nd	10	-	-
6502.53	Rn I	-	[10]	Rs	6492.05	Sm I	4	-	Kn	6482.07	N II	-	[300]	Fl
6502.43	Ta	40	-	Ks	6491.81	Te	-	[15]	Bl	6481.977	Ce	6	-	-
6502.28	Cl I	-	[2]	Ks	6491.759	Pr	20	-	-	6481.874	Fe I	12 h	80 wh	-
6502.237	Re	6	-	-	6491.712	Mn	100	-	-	6481.77	Er	4	-	Ed
6502.2	bh F	80	-	L	6491.28	N I	-	[25]	Du	6481.73	N I	-	[15]	Mt
6502.04	F I	-	[2]	Gf	6491.28	Sm I	3	-	Kn	6481.718	U	3	-	-
6502.00	Sm II	40	-	Kn	6490.994	Ce	8	-	-	6481.46	Cu II	-	15	Sh
6501.991	Th	2	-	Fd	6490.945	Nd	5	-	-	6481.237	U	2	-	-
6501.864	Nd	5	-	-	6490.748	Sm II	60 d	-	-	6481.2	bh F	5	-	L
6501.681	Fe	2 h	-	Bu	6490.624	Mn	3	-	Sl	6481.15	A I	-	[8]	Ms
6501.535	Eu	300	-	-	6490.48	Se II	-	[500]	Bl	6481.03	Dy	2	-	Ks
6501.47	Hg	-	[5]	Ps	6490.45	Pt	6	-	-	6480.7	bh Zr	4	-	L
6501.25	Hg	-	[5]	Lf	6490.44	Ba	2	-	Bu	6480.214	Nd	10	-	-
6501.212	Cr	35	-	HI	6490.336	Co I	70	-	-	6480.107	Gd	40	-	-
6501.2	bh Yt	15	-	Me	6490.25	Sb	6	-	Wt	6479.950	U	2	-	-
6501.188	Re	5	-	-	6490.21	Sm	6 d	-	Kn	6479.849	Nd	6	-	-
6501.072	Nd	3	-	-	6489.9	bh F	20	-	L	6479.69	Xe II	-	[3 wh]	Hu
6501.03	Hg	-	[5]	Lf	6489.645	Zr I	50	-	-	6479.64	Cu	-	2	Sh
6501.00	Sm	4	-	Kn	6489.44	Sm	2	-	-	6479.249	Sm	4	-	-
6500.730	Pr	10	-	-	6489.35	As II	-	3	Ro	6479.201	Mo	3	2	-
6500.40	Ta	2	-	Ks	6489.27	Yb	5	30	Me	6479.155	Zn I	10	-	IHz
6500.37	Xe I	-	[15]	Me	6489.199	Nd	5	-	-	6478.94	I I	-	[5]	Ob
6500.25	A II	-	[6]	Rt	6489.15	Er	8	-	Ed	6478.78	Nd	4	-	Ks
6500.159	Nd	8	-	-	6489.10	Yb	800	40	Me	6478.7	Hf	2	-	Me
6500.15	Rn I	-	[4]	Rs	6488.60	Sm	4	-	-	6478.5	bh F	2	-	L
6499.650	Ca I	30	15	I	6488.34	Se II	-	[100]	Bl	6478.4	bh C	-	-	L
6499.628	Co	2 h	-	Sl	6488.18	I I	-	[150]	Ev	6478.36	Sm	6	-	Kn
6499.52	N I	-	[25]	Du	6488.07	Kr I	-	[15]	Me	6478.026	Pr	15 w	-	-

6477.8—6444.7 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R
6477.878	Co I	80	-	-	-	6467.465	Ti	5	-	-	Bh	6455.07	Ni	10	-	-	-
6477.8	bh V	2	-	-	L	6467.418	Ce	20	-	-	-	6455.06	Ir	5	-	-	Me
6477.67	Lu	30	2	-	Me	6466.970	Mo	4	2	-	-	6455.058	Nd	3	-	-	-
6477.48	I I	-	-	[25]	-	6466.898	Ce	5	1	-	-	6454.996	Co I	200 w	-	-	-
6477.02	Sm II	10 d	-	-	Kn	6466.60	Cu II	-	3	-	Sh	6454.95	Sb	6 h	-	-	Wt
6476.74	Ca	2 h	-	-	Ad	6466.565	Gd	25	-	-	-	6454.865	Pr	3	-	-	-
6476.54	Eu	6 W	-	-	-	6466.56	A I	-	-	[20]	Ms	6454.795	Nd	8	-	-	-
6476.5	bh Sc	10	-	-	Me	6466.30	Sm	5	-	-	Kn	6454.55	O I	-	-	[150]	Ps
6476.43	Sm	5	-	-	-	6465.793	Sr	5	3	-	-	6454.531	La I	125	-	-	-
6476.24	Bi I	8	-	-	Wt	6465.39	Sb II	-	15	-	Kz	6454.02	Er	4	-	-	Ed
6476.201	Nd	3	-	-	-	6465.3	Eu	2 W	-	-	Kn	6453.69	O I	-	-	[100]	Ps
6475.91	I	-	-	[70]	Bi	6465.236	Nd	8	-	-	-	6453.58	Sn II	6	-	300 wh	Wt
6475.9	bh F	2	-	-	L	6465.005	U	25	-	-	-	6453.441	Pr	10	-	-	-
6475.73	Bi I	8	-	-	Wt	6464.98	Cd II	5	50	-	Vs	6453.37	Sm	2	-	-	-
6475.625	Fe I	8 h	8 h	-	-	6464.40	Sm	2	-	-	-	6453.293	Mo	9	2	-	-
6475.32	Mn	4 h	-	-	Si	6464.32	Cb	4	2 d	-	Me	6453.113	Ta	3	-	-	-
6475.287	Pr	3	-	-	-	6464.26	Br	-	-	[3]	Bi	6453.11	Cb	-	-	3 h	Me
6474.94	Dy	2	-	-	Ks	6464.020	Ti I	2	-	-	-	6452.75	N I	-	-	[5]	Du
6474.74	Yb	5	50	-	Me	6463.582	Nd	15	-	-	-	6452.730	Rh	2	-	-	-
6474.566	Co	25 w	-	-	-	6463.52	F I	-	-	[15]	En	6452.5	bh Zr	2	-	-	L
6474.47	Se II	-	-	[15]	Bt	6463.516	Mo	8	2	-	-	6452.344	V I	25	-	[10]	-
6474.47	Ra	-	-	[15]	Rs	6463.15	Yb	10	100	-	Me	6452.050	Sm	25	-	-	-
6474.43	Sm II	4 h	-	[10]	Lq	6463.12	Lu	400	800	-	Me	6451.79	Xe I	-	-	[10 hl]	Me
6474.28	Te	-	-	[30]	Bi	6463.010	Co I	25 h	-	-	-	6451.62	Zr I	10	-	-	-
6474.25	Sm II	25	-	-	Kn	6462.9	Te I	-	-	[7]	Rd	6451.580	Ni I	2 h	-	-	-
6474.231	Nd	3	-	-	-	6462.8	bh Sc	3	-	-	Me	6451.5	bh Cr	2	-	-	L
6474.20	Cu I	15	-	-	Me	6462.729	Fe I	20	7 h	-	-	6451.234	Nd	5 d	-	-	-
6473.991	Mo	20	4	-	-	6462.682	Pr	5	-	-	-	6451.14	Co I	70 w	-	-	-
6473.88	Hf II	3	20	-	Me	6462.646	Th	30 s	-	-	-	6450.854	Ba	100	20	-	IKs
6473.707	Ce	6	1	-	-	6462.584	Co	60	-	-	-	6450.54	Dy	2	-	-	Ks
6473.7	bh Zr	20	-	-	L	6462.581	Gd	50	-	-	-	6450.48	Xe I	-	-	[7]	Me
6473.34	Sm	8	-	-	-	6462.566	Ca I	125	50	-	I	6450.442	Sm	5	-	-	-
6473.26	Eu	3	-	-	Kn	6462.559	Yt	4	5	-	-	6450.365	Ta	200	-	-	-
6472.855	Ta	2	-	-	-	6462.36	Sn	4	300 wh	-	Wt	6450.36	Cl I	-	-	[15]	Ks
6472.841	Xe I	-	-	[150]	IMe	6462.30	Hf II	1	4	-	Me	6450.331	La I	20	-	-	-
6472.72	Gd	8	-	-	Ks	6461.890	Ce	5	-	-	-	6450.239	Co I	1000	-	-	-
6472.617	Cs I	15	-	-	Ms	6461.50	Xe I	-	-	[3]	Me	6449.94	La	2	-	-	Me
6472.47	A	-	-	[4]	Rt	6461.48	Xe	-	-	[10 wh]	Hu	6449.9	Hf	2	-	-	Me
6472.34	Sm II	150 d	-	-	Kn	6461.467	Pr	2	-	-	-	6449.83	Cb	6	2	-	Me
6472.15	Rn I	-	-	[10]	Rn	6461.39	Se I	-	-	[15]	Ms	6449.810	Ca I	60	12	-	I
6472.04	Dy	2	-	-	Ks	6461.170	Nd	3	-	-	-	6449.8	Eu	2	-	-	Kn
6471.77	Ho	5	-	-	Ed	6461.15	Sm	5	-	-	Kn	6449.769	Co	3	-	-	-
6471.71	Nd	2	-	-	Ks	6461.1	bh Sc	3	-	-	Me	6449.28	Re	4 h	-	-	Me
6471.66	Co	3	-	-	-	6460.86	Dy	2	-	-	Ks	6449.167	U	100	-	-	-
6471.660	Ca	40	15	-	I	6460.30	Pr	3 w	-	-	Ed	6448.78	Kr I	-	-	[10]	Me
6471.66	Br	-	-	[8]	Bi	6460.28	Tm	400	80	-	Me	6448.70	Xe I	-	-	[2 h]	Me
6471.580	Sm	15	-	-	-	6460.27	Er	6	-	-	Ed	6448.69	Ir	3	-	-	Me
6471.39	Tb	6	-	-	Ed	6460.1	P II	-	-	[30]	Dj	6448.49	Cu II	-	-	10	Sh
6471.210	Th	5	-	-	-	6459.921	Ta	15	-	-	-	6448.43	Hf	1	2	-	Me
6471.201	Mo	50	4	-	-	6459.78	Sm	3 d	-	-	Kn	6448.42	Se	-	-	[15]	Bt
6471.03	N I	-	-	[3]	Du	6459.36	Sm	15	-	-	-	6448.41	I	-	-	[15 h]	Bi
6470.98	Zn	4	-	-	Ps	6459.065	Ta	2	-	-	-	6448.331	Sm	6	-	-	-
6470.89	Kr II	-	-	[50]	Me	6458.8	Co	2 h	-	-	Si	6448.32	Rn I	-	-	[10]	Rs
6470.86	Tb	4	-	-	Ed	6458.44	Sm	2	-	-	-	6448.25	La I	5	-	-	Me
6470.75	Eu	30 W	-	-	Kn	6458.41	I II	-	-	[15]	Bi	6448.126	Os	3	-	-	-
6470.550	U	5	-	-	-	6458.347	Rb II	-	400	-	Lp	6448.109	La I	10	-	-	-
6470.46	Sm II	60 d	-	-	Kn	6458.052	Ce	25	-	-	-	6448.10	Sc I	4 h	3	-	Me
6470.270	Gd	10	-	-	-	6457.995	Eu	500	-	-	-	6448.051	Sm	8	-	-	-
6470.256	Pr	3	-	-	-	6457.953	Nd	4	-	-	-	6448.042	U	3	-	-	-
6470.210	Zr I	40	-	-	-	6457.93	N I	-	-	[25]	Du	6447.532	Sm	30	-	-	-
6470.16	Co I	3	-	-	-	6457.8	bh Sc	15	-	-	Me	6447.055	Co	2 h	-	-	-
6470.152	Cu II	-	-	50	Sh	6457.80	Te	-	-	[5]	Bi	6446.902	Ba	20 R	15	-	Sz
6470.15	Se I, II	-	-	[10]	Rd	6457.627	Zr I	6	-	-	-	6446.859	Tb	6	-	-	-
6469.764	Sm	4	-	-	-	6457.546	Sm	15	-	-	-	6446.7	Te I	-	-	[5]	Rd
6469.705	Xe I	-	-	[300]	IMe	6457.54	Cu II	-	3	-	Sh	6446.676	Sr	8	4	-	-
6469.42	Sm	3	-	-	Kn	6457.285	Th	15	-	-	-	6446.604	La I	15	100	-	-
6469.326	In II	-	-	[12]	Ps	6457.126	Nd	5	-	-	-	6446.5	bh Zr	3	-	-	L
6469.248	In II	-	-	[20]	Ps	6456.97	Hf	4	8	-	Me	6446.432	Fe II	-	-	20	Do
6469.214	Fe I	8 h	5 h	-	Bb	6456.92	Yb	4	4	-	Me	6446.342	Mo	20	4	-	-
6469.13	Te I	-	-	[3 h]	Bi	6456.73	Gd	15	-	-	Ks	6446.2	bh Sc	30	-	-	Me
6469.00	Sm	3	-	-	Kn	6456.7	Te I	-	-	[15 w]	Rd	6446.20	Ra I	-	-	[1000]	Rs
6468.994	In II	-	-	[80]	Ps	6456.52	Au II	10	5	-	Ed	6446.154	Ce	6	-	-	-
6468.971	Ce	3	-	-	-	6456.48	Sm	2	-	-	-	6446.15	Br	-	-	[15]	Bi
6468.889	In II	-	-	[50]	Ps	6456.376	Fe II	-	-	8 h	Do	6445.866	Ta	20	-	-	-
6468.60	Dy	3	-	-	Ks	6456.3	Ga II	-	-	[15]	Sy	6445.786	Nd	8	-	-	-
6468.557	In II	-	-	[12]	Ps	6456.291	Kr I	-	-	[200]	Sy	6445.745	Zr I	30	-	-	-
6468.477	In II	-	-	[12]	Ps	6456.24	Sm	30 d	-	-	-	6445.15	Rh	2	-	-	Me
6468.434	La I	25	-	-	-	6456.200	Pr	5 W	-	-	-	6445.132	W	5	2	-	-
6468.325	Sm	4	-	-	-	6456.07	O I	-	-	[500]	Ps	6444.98	Hf	1	2	-	Me
6468.32	N I	-	-	[30]	Du	6455.988	La I	100	-	-	-	6444.89	Pd I	2	-	-	Me
6468.2	bh Yt	8	-	-	Me	6455.85	Hf II	2	20	-	Me	6444.89	Lu	5	15	-	Me
6468.08	A	-	-	[4]	Rt	6455.828	Ta	40	-	-	-	6444.860	Gd	2	-	-	-
6467.90	Hf II	2	2	-	Me	6455.600	Ca	10	7	-	[Wg]	6444.84	Ru	25	-	-	-
6467.757	Pr	6	-	-	-	6455.59	Sm II	40	-	-	-	6444.83	Sn	5	-	-	Wt
6467.47	Eu	2	-	-	Kn	6455.36	S	-	-	[70]	Bi	6444.721	Ne I	-	-	[150]	Ps

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
6444.697	Co I	25	-	-	-	6432.07	Ca	-	6	Ad	-	6421.507	Ni I	3 h	-	-	-
6444.610	Ta	40	-	-	-	6431.966	Cs I	-	15	Ms	-	6421.48	Rn I	-	[10]	-	Ra
6444.51	I I	-	[100]	-	-	6431.96	Sm II	50	-	Kn	-	6421.368	Cr	35	-	-	S
6444.25	Se I	-	[100]	-	-	6431.92	Kr	-	[2 h]	Me	-	6421.355	Fe I	60	40 h	-	S
6444.17	Dy	2	-	-	Ed	6431.863	Pr	8	-	-	-	6421.029	Kr I	-	[100]	-	S
6443.96	As	-	3	-	Ro	6431.8	Hf	2	-	Me	-	6420.47	N I	-	[30]	-	Du
6443.937	Pr	2	-	-	-	6431.711	Nd	2	-	-	-	6420.3	bh Sc	2	-	-	Me
6443.89	A	-	[4]	-	Rt	6431.634	V I	4	-	-	-	6420.18	Kr II	-	[300]	-	Me
6443.887	Ta	10 h	-	-	-	6431.57	A I	-	[15]	Ms	-	6419.977	Fe I	18 h	15 h	-	-
6443.71	Dy	3	-	-	Ks	6431.258	Rh	2	-	-	-	6419.763	Mo	7	2	-	-
6443.492	Mn	10	-	-	-	6431.177	Nd	2	-	-	-	6419.633	Pr	2	-	-	-
6443.47	Cu II	-	5	-	Sh	6431.09	Co I	5 h	-	-	-	6419.541	Ca II	-	[10]	-	Lp
6443.26	I	-	30 h	-	Bl	6431.03	Sm II	50 d	-	-	-	6419.4	Ga II	-	[25]	-	Sy
6443.24	Rn I	-	[4]	-	Rs	6430.97	I	-	15 h	Bl	-	6419.3	bh Zr	2	-	-	L
6443.05	La II	8	25 h	-	Me	6430.95	Tm	15	60	Me	-	6419.27	Se	-	[15]	-	Bt
6442.55	U	2	-	-	-	6430.93	U	4	-	-	-	6419.25	Cl II	-	[8]	-	Ks
6441.95	A	-	[6]	-	Rt	6430.851	Fe I	100	80	S	-	6419.096	Ti I	15	-	-	-
6441.91	Rn I	-	[6]	-	Rs	6430.79	Ta	150	-	-	-	6419.0	bh F	50	-	-	L
6441.85	Dy	2	-	-	Ks	6430.471	V I	8	-	Me	-	6418.992	Mo	5	2	-	-
6441.70	N I	-	[70]	-	Mt	6430.46	Cb	80	10	Me	-	6418.98	Xe I	-	[30 h]	-	Mo
6441.698	Cu II	-	40	-	Sh	6430.45	Ti II	-	5	El	-	6418.95	Hg	-	[25]	-	Lf
6441.43	Se I	-	[20]	-	Rd	6430.337	Co I	30 h	-	Si	-	6418.928	Sm	5	-	-	-
6441.31	Er	10	-	-	Ed	6430.155	Xe I	10	[20]	Ime	-	6418.90	S	-	[7]	-	Bl
6441.14	Lu	40	-	-	Me	6430.068	Ce	10	-	-	-	6418.88	Er	4	-	-	Ed
6441.045	Ce	3	-	-	-	6429.907	Co I	50	-	-	-	6418.88	Xe II	-	[30]	-	Hu
6441.03	Tb	4	-	-	Ed	6429.840	Nd	2	-	-	-	6418.80	Rh	2	-	-	Me
6440.974	Mn	60	-	-	-	6429.645	Pr	8	1	-	-	6418.477	Ta	2	-	-	-
6440.95	N	-	[25]	-	Du	6429.49	Hf	1	2	Me	-	6418.43	A	-	[4]	-	Rt
6440.81	Yb	-	5	-	Me	6429.04	Mo	4	2	-	-	6418.41	Xe I	-	[30]	-	Me
6440.74	Kr II	-	[5 h]	-	Me	6428.956	Sm	15	-	-	-	6418.41	Dy	2	-	-	Ke
6440.54	Sm	8	-	-	Ab	6428.68	U	3	-	-	-	6418.340	Ir	5	-	-	-
6440.22	I	-	[100]	-	Bl	6428.67	Se	-	[15]	Bl	-	6417.99	Ta	2	-	-	Ks
6439.970	Ce	6	-	-	-	6428.645	Nd	25	-	-	-	6417.97	Yb	125	3	-	Me
6439.97	Eu	40	-	-	Kn	6428.596	Ta	40	-	-	-	6417.824	Co I	200 r	-	-	-
6439.86	Nd	3	-	-	Kn	6428.54	I	-	[30]	Bl	-	6417.7	bh F	100	-	-	L
6439.83	Rn I	-	[2]	-	Rs	6428.315	Sm	50 d	-	-	-	6417.69	Se II	-	[10]	-	Bt
6439.83	Co	2 h	-	-	Me	6428.28	Eu	200	-	Kn	-	6417.66	I	-	[15]	-	Bl
6439.720	W	6	1	-	-	6428.125	Cr	12	-	-	-	6417.568	Ru	15	-	-	-
6439.72	Sm II	10 d	-	-	Ks	6427.79	Dy	2	-	Ks	-	6417.513	Sm II	100 d	-	-	-
6439.318	Sm	3	-	-	-	6427.7	bh Pb	3	-	L	-	6417.220	La I	6	-	-	-
6439.171	Nd	20	-	-	-	6427.690	K II	-	[20]	Dm	-	6417.17	Sm	8	-	-	Kn
6439.171	Co	80	-	-	-	6427.57	Cu I	3	-	Me	-	6417.05	N	-	[10]	-	Du
6439.073	Ca I	150	50	-	I	6427.51	U	2	-	-	-	6416.95	Se	-	[6]	-	Bl
6439.03	Zr I	8	-	-	-	6427.40	Dy	2	-	Ks	-	6416.942	Fe II	-	-	-	Kn
6438.96	In	-	5	-	Sq	6426.731	Ta	5	-	-	-	6416.61	Kr II	-	[60 hs]	-	Me
6438.9	Ra I	-	[30]	-	Rs	6426.73	Rn I	-	[8]	Rs	-	6416.5	bh F	100	-	-	L
6438.4696	Cd I	2000	1000	-	IS	6426.62	Sm II	100 d	-	-	-	6416.33	Tm	20	-	-	Me
6438.08	Br	-	[2]	-	Ks	6426.614	La I	4	-	-	-	6416.315	A I	-	[100]	-	Ime
6438.03	W	3	1	-	Me	6426.170	Zr I	4	-	-	-	6416.30	F	-	[4]	-	Gl
6437.69	Eu I	700	-	-	-	6425.909	Sm	10	-	-	-	6416.101	Th	3	2	-	-
6437.63	A II	-	[4]	-	Rt	6425.790	Nd	15	-	-	-	6416.004	W	5	1	-	-
6437.630	Sm	10	-	-	-	6425.64	S	-	[15 h]	Bl	-	6415.93	Sb	6 h	-	-	Wt
6437.540	In II	-	[12]	-	Ps	6425.64	Cl	-	[5]	Ks	-	6415.79	I	-	[20]	-	Ev
6437.365	Ta	2	-	-	-	6425.574	Er	4	-	-	-	6415.65	Kr I	-	[20]	-	Me
6437.158	Yt I	4	5	-	-	6425.442	Ta	3 h	-	-	-	6415.531	Pr	3 W	-	-	-
6437.06	Te	-	[1000]	-	Bl	6425.36	W	5	1	Me	-	6415.51	Er	4	-	-	Ed
6437.01	N I	-	[30]	-	Du	6425.296	Ce	3	1	-	-	6415.50	S I	-	[10]	-	Ms
6436.914	In II	-	[5]	-	Ps	6425.115	Co I	5	-	m	-	6415.3	bh F	100	-	-	L
6436.57	Dy	2	-	-	Ks	6424.905	Ni I	2 h	-	-	-	6415.24	Si I	4 h	-	-	Ks
6436.412	In II	-	[5]	-	Ps	6424.888	U	6	-	-	-	6415.18	Cu I	3	-	-	Az
6436.405	Ce	12	-	-	-	6424.841	Nd	4	-	-	-	6414.724	Rh I	50	-	-	-
6436.2	Au I	5	-	-	MI	6424.817	Th	4	2	-	-	6414.62	Cu II	-	20	-	Sh
6435.94	Pt	3	-	-	-	6424.52	Ca	2 h	-	Ad	-	6414.603	Ni I	5	-	-	-
6435.66	Dy	2	-	-	Ks	6424.51	Gd	10	-	-	-	6414.1	bh F	100	-	-	L
6435.5	P II	-	[5]	-	Dj	6424.502	Ce	4 d	-	-	-	6414.029	Nd	3	-	-	-
6435.318	Sm	25	-	-	-	6424.43	Tb	6	-	Ed	-	6414.01	Ga	-	15	-	KI
6435.156	V I	2	-	-	-	6424.368	Mo	100	20	-	-	6413.950	Mn	25	-	-	SI
6435.000	Yt I	150	50	-	-	6424.256	Sm	3	-	-	-	6413.71	S	-	[500]	-	Bl
6434.96	Dy	2	-	-	Ed	6424.1	bh Yt	2	-	Me	-	6413.699	Pr	10	1	-	-
6434.80	Cl	-	[25]	-	Ks	6424.0	bh Sc	2	-	Me	-	6413.66	F I	-	[150]	-	En
6434.550	Ta	5	-	-	-	6423.90	Cu II	-	30	-	-	6413.612	Th	5	-	-	-
6434.396	Ce	12	-	-	-	6423.10	Er	6	-	Ed	-	6413.59	Er	6	-	-	Ed
6434.329	Zr I	6	-	-	-	6422.96	Te	-	[70]	Bl	-	6413.353	Sc I	10	25	-	-
6433.953	Sm	15	-	-	-	6422.94	A	-	[5]	Rt	-	6412.995	Rh I	8	-	-	-
6433.6	bh Pb	3	-	-	L	6422.93	N	-	[10]	Du	-	6412.9	bh F	80	-	-	L
6433.309	Sm	3	-	-	-	6422.90	Se II	-	[125]	Bt	-	6412.53	Kr II	-	[4 h]	-	Me
6433.236	Nd	12	-	-	-	6422.9	Pb II	-	[2]	Ea	-	6412.389	Mo	15	-	-	-
6433.22	Cb	30	4	-	Me	6422.415	Gd	50	-	-	-	6412.38	Xe I	-	[10]	-	Me
6433.175	V I	2	[3]	-	-	6422.06	Cb	6	-	Me	-	6412.3	bh Zr	12	-	-	L
6432.96	Dy	2	-	-	Ks	6421.93	Dy	5	-	Ks	-	6412.15	Te	-	[70]	-	Bl
6432.78	Cu II	-	3	-	Sh	6421.88	Gd	2	-	Ks	-	6411.893	Th	10	-	-	-
6432.732	Yb	30	40	-	-	6421.743	Co I	20	-	m	-	6411.8	bh F	50	-	-	L
6432.654	Fe II	-	2	-	Kn	6421.708	Ne I	-	[100]	Ps	-	6411.664	Fe I	100	80 h	-	-
6432.653	Nd	12	-	-	-	6421.54	Yb	3	-	Me	-	6411.593	U	6	-	-	-
6432.50	Er	4	-	-	Ed	6421.52	Pr	2 h	-	Kn	-	6411.467	Re	20	-	-	-

6411.4—6377.6 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
6411.403	Sm	10	-	-	6401.295	Mo	3	-	-	6389.804	U	18	-	-
6411.344	Eu	500	-	-	6401.17	Se I	-	[15]	-	6389.589	Pr	8 W	-	-
6411.34	Ba	9	3	Lr	6401.076	Ne I	-	[100]	-	6389.595	Eu	9	-	-
6411.29	I	-	[30]	Ev	6401.070	Eu	20	6	-	6389.447	Ta	100	-	-
6411.18	Cu II	-	10	Sh	6400.932	Mo	700 W	-	-	6389.111	Mo	15	4	-
6410.995	La I	100	-	-	6400.9	bh F	2	-	L	6388.973	Mn	2	-	-
6410.99	Se I	-	[15]	Rd	6400.590	V	-	2	Me	6388.94	I I	-	[30]	Bl
6410.7	bh F	30	-	L	6400.59	Cu	3	-	Az	6388.91	Hf	1	2	Me
6410.660	Pr	6 w	-	-	6400.40	Yb	200 h	4 h	Me	6388.38	Dy	2	-	Ks
6410.598	Nd	2	-	-	6400.355	U	3	-	-	6388.324	Sb	2 h	-	Wt
6410.344	Sm II	4	-	-	6400.318	Fe I	2	-	-	6388.239	Sr I	35	10	-
6410.327	Er	4	-	-	6400.018	Fe I	200	150 h	-	6388.20	Hf	1	2	Me
6410.32	Br I	-	[30]	Ks	6399.99	Se I	-	[15]	Ms	6388.194	Er	12	-	-
6410.216	Rh I	4	-	-	6399.907	Ce	4	-	-	6388.068	Sm	3	-	-
6410.17	Kr I	-	[5]	Me	6399.86	Sm	2	-	Kn	6387.991	Ta	3	-	-
6410.103	Eu	500 W	-	-	6399.79	Er	4	-	Ed	6387.972	V	-	2	Me
6409.84	Kr II	-	[10 hs]	Me	6399.736	W	5	1	-	6387.8	bh Zr	4	-	L
6409.753	Ne I	-	[150]	Ps	6399.6	bh F	2	-	L	6387.72	Yb	3	-	Me
6409.7	bh F	20	-	L	6399.415	Sm	3	-	-	6387.59	Ca	2 h	-	Ad
6409.54	I	-	[15]	Bl	6399.41	Cl II	-	[10]	Ks	6387.56	Dy	2	-	Ks
6409.52	Hf	3	5	Me	6399.23	A II	-	[8]	Rt	6387.1	bh Yt	10	-	Me
6409.4	Te I	-	[5]	Rd	6399.053	La II	15	200	-	6387.07	Yt	8	5	-
6409.109	Mo	25	4	-	6399.0	bh F	2	-	L	6386.94	Cs	25 l	-	Me
6408.598	Th	4	-	-	6398.858	Pt	6	-	-	6386.864	Ce	12 w	-	-
6408.555	Gd	2	-	-	6398.857	Os	3	-	-	6386.81	Dy	4	-	Ks
6408.473	Sr	50	20	-	6398.752	V	-	2	Me	6386.768	Sm	10	-	-
6408.458	Co I	3 h	-	-	6398.64	Cl	-	[40]	Ks	6386.69	Co I	5 h	-	-
6408.423	Er	4	-	-	6398.295	Sm	12	-	-	6386.56	Rh I	4 h	-	Me
6408.4	bh Sc	2	-	Me	6398.259	Ir	4	-	-	6386.501	Sr I	35	10	-
6408.13	S I	-	[5]	Ms	6398.13	Er	6	-	Ed	6386.48	S	-	[5]	Bt
6408.042	Sm II	10 d	-	-	6398.05	S	-	[300]	Bl	6386.23	Hf	15	20	Me
6408.029	Fe I	50	30 h	-	6397.996	Pr	12	-	-	6386.102	Ce	5	-	-
6407.7	bh F	10	-	L	6397.99	Xe II	-	[50]	Hu	6385.196	Nd	100	-	-
6407.606	Nd	5	-	-	6397.69	Se I	-	[15]	Rd	6384.915	U	2	-	-
6406.997	Zr I	18	-	-	6397.346	V	-	2	Me	6384.89	S	-	[300]	Bl
6406.966	Mo	3	2	-	6397.30	S	-	[300]	Bl	6384.825	Sm	2	-	-
6406.7	bh F	20	-	L	6397.185	U	12	-	-	6384.739	W	3	1	-
6406.462	Mo	8	2	-	6396.876	Nd	3	-	-	6384.719	A I	-	[100]	Ms
6406.24	Sm II	30 d	-	Kn	6396.63	A	-	[2]	Rt	6384.697	Ni I	5 h	-	-
6406.16	Re	20 W	-	Me	6396.61	Ga	-	20	Kl	6384.669	Mn	25	-	-
6406.110	Eu	100	-	-	6396.61	Dy	4	-	Ks	6384.633	Nd	6	-	-
6406.08	Sb	-	[6]	Lg	6396.54	S I	-	[15]	Fh	6384.6	bh Zr	4	-	L
6406.97	Tb	6	-	Ed	6396.524	Co I	10 h	-	-	6384.487	Co	2 h	-	-
6406.95	As II	-	10	Rd	6396.46	Te	-	[50]	Bl	6384.303	Sm	2	-	-
6405.9	Te I	-	[18]	Rd	6396.373	Sc	2 h	-	-	6384.13	Cl II	-	[5]	Ks
6405.87	I I	-	[5]	Bl	6396.244	Ce	6	-	-	6384.04	Er	4	-	Ed
6405.8	bh F	10	-	-	6396.21	Sb	4 h	[2 h]	Lg	6383.861	Eu	350	-	-
6405.6	bh Yt	5	-	Me	6396.0	bh Zr	4	-	L	6383.731	Mo	3	2	-
6405.54	Er	4	-	Ed	6395.446	U	100	-	-	6383.591	U	8	-	-
6405.406	Sb	4	-	Wt	6395.427	Sm	2	-	-	6383.34	Hg	-	[15]	Lf
6405.15	F	-	[4]	Gl	6395.26	I	-	[30]	Bl	6382.9914	Ne I	-	[1000]	S
6404.9	bh F	5	-	L	6395.195	Co I	125	-	-	6382.944	Re	15 W	-	-
6404.69	Kr	-	[3 wh]	Me	6395.07	S I	-	[15]	Fh	6382.93	Yb	1	2	Me
6404.62	Yb	2 h	-	Me	6395.0	bh Cr	3	-	L	6382.741	Eu	200	3	-
6404.618	Sm II	2 h	-	-	6394.967	Sm	2	-	-	6382.487	W	3	1	-
6404.53	Se I	-	[15]	Ms	6394.94	Hg II	-	[25]	Ps	6382.188	Gd	60	-	-
6404.485	U	3	-	-	6394.80	Nd	4	-	-	6382.169	Mn	20	-	-
6404.395	Pr	4 w	-	-	6394.7	bh F	10	-	L	6382.069	Nd	20	-	-
6404.30	Zr I	4	-	-	6394.28	Kr II	-	[4 hs]	Me	6381.416	Ti I	10	-	-
6404.204	W	25	2	-	6394.234	La I	150	-	-	6381.262	V I	2	-	-
6404.117	Sm	5	-	-	6394.1	bh Zr	5	-	L	6380.974	Gd	100	-	-
6404.0	bh F	5	-	-	6393.605	Fe I	100	80 h	S	6380.747	Fe	25 h	8 h	-
6403.98	Sm	2	-	Kn	6393.275	V I	4	-	-	6380.746	Sr I	30	8	-
6403.885	Ir	3	-	-	6393.191	Pr	25	-	-	6380.709	Sm	3	-	-
6403.70	Cu II	-	5	Sh	6393.023	Ce	5	-	-	6380.45	Rn I	-	[12]	Ra
6403.58	S I	-	[2]	Ms	6392.781	U	20	-	-	6380.19	Hf	3	6	Me
6403.2	bh F	5	-	L	6392.445	Sm	2	-	-	6380.115	V	-	20	Me
6403.196	Nd	3	-	-	6392.209	Ta	15	-	-	6380.045	Sm	3	-	-
6403.151	Sc	2 h	2	-	6392.175	Sb	8	2 h	Wt	6379.75	Ce	2	-	Ks
6403.150	Os	15	-	-	6392.103	Pr	10 W	-	-	6379.636	U	15	-	-
6403.15	Tb	4	-	Ed	6391.96	Se	-	[15]	Bt	6379.63	N II	-	[70]	Fl
6403.10	A	-	[2]	Rt	6391.323	U	2	-	-	6379.364	V I	8	2	-
6403.01	Eu	3	-	Kn	6391.215	Mn	3	-	Sl	6379.069	Ta	8	-	-
6402.758	Nd	3	-	-	6391.14	Kr II	-	[30]	Me	6378.956	Mn	20	3	-
6402.4	bh F	5	-	L	6391.118	Mo	12	4	-	6378.91	Ba II	3	[5]	Ra
6402.33	Rh I	3	-	-	6390.99	Hf	1	2	Me	6378.824	Sc I	8	15	-
6402.31	Dy	3	-	Ks	6390.838	Sm II	100	-	-	6378.80	I	-	[30]	Ev
6402.31	Gd	3	-	Ks	6390.661	Dy	2	-	-	6378.623	Pr	8 W	-	-
6402.246	Ne I	-	[2000]	I	6390.484	La II	70	100	-	6378.32	Ti II	-	[10]	El
6402.23	Sm	2	-	Kn	6390.321	Ce	8	-	-	6378.3	bh Zr	15	-	L
6402.07	W	5	1	Me	6390.30	Hf	1	2	Me	6378.263	Ni I	20 h	-	-
6402.005	Yt I	12	7	-	6390.228	Ru	9	-	-	6378.075	Sm	2	-	-
6401.7	bh F	2	-	L	6390.19	Te	-	[15]	Bl	6377.84	Co II	-	20	Sh
6401.45	Sm	10 d	-	Kn	6389.997	Nd	15	-	-	6377.72	Dy	3	-	Ks
6401.45	Tm	40	5	Me	6389.870	Sm II	100	-	-	6377.617	Pr	5	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
6377.41	Au	5	-	-	Wt	6365.013	Ne I	-	[100]	-	Ps	6354.98	Cs I	15 h	-	-	Me
6377.256	Nd	4	-	-	-	6364.92	Ti I	8	-	-	-	6354.85	Lu	20	-	-	Me
6377.04	Yb	-	6 h	-	Me	6364.909	Ta	3	-	-	-	6354.754	Nd	4	-	-	-
6377.00	Rh	2	-	-	Me	6364.89	A I	-	[20]	-	Ms	6354.738	In II	-	-	[5]	Ps
6376.944	Th	12	-	-	-	6364.75	B	2	-	-	Wt	6354.72	Cd II	5	40	-	Vs
6376.74	Se	-	[15]	-	Bt	6364.726	W	4	1	-	-	6354.35	Ho	8	-	-	Ed
6376.450	Ru I	9	-	-	-	6363.939	Sr I	25	4	-	-	6354.318	In II	-	-	[20]	Ps
6376.20	Hf	1	3	-	Me	6363.935	Nd	2	-	-	-	6353.66	Dy	2	-	-	Ks
6376.11	Sb II	4	-	[6]	Lg	6363.93	Te	-	[5]	-	Bl	6353.494	Sm	50	5	-	-
6376.984	U	5	-	-	-	6363.77	Rh I	2	-	-	Me	6353.438	U	3	-	-	-
6376.970	Nd	5	-	-	-	6363.407	Ru I	4	-	-	-	6353.437	Sm	2	30	-	-
6376.57	Er	4	-	-	Ed	6363.26	I	-	[15]	-	Bl	6353.29	Xe II	-	-	[30 hl]	Hu
6376.56	La I	3	-	-	-	6363.22	Gd	3	-	-	Ks	6353.12	Dy	2	-	-	-
6376.391	W	5	-	-	-	6363.158	Sm	3	-	-	-	6353.013	Sm II	20	20	-	-
6376.28	Xe II	-	[80]	-	Hu	6363.10	Si	3	1	-	Sy	6352.94	Br	-	-	[25]	Bl
6376.056	La	4	-	-	-	6362.958	In II	-	[40]	-	Ps	6352.750	Co I	2 h	-	-	m
6376.04	Dy	2	-	-	Ks	6362.942	Re	2	-	-	-	6352.64	Tm	40	4	-	Me
6374.88	Br	-	[8]	-	Bl	6362.896	In II	-	[40]	-	Ps	6352.3	bh Yt	5	-	-	Me
6374.812	Re	2 w	-	-	-	6362.874	Cr I	150	8	-	-	6351.958	Nd	4	-	-	-
6274.623	Sm	2 h	-	-	-	6362.8	Xe	-	[3 wh]	-	Hu	6351.90	Kr I	-	-	[8]	Me
6374.60	Hf	1	2	-	Me	6362.693	Re	2	-	-	-	6351.891	Ru I	2	-	-	-
6374.497	V I	2	1	-	-	6362.5	bh Zr	5	-	-	L	6351.873	Ne I	-	-	[100]	Ps
6374.493	U	2	-	-	-	6362.373	In II	-	[12]	-	Ps	6351.70	Gd	5	-	-	Ks
6374.49	Er	4	-	-	Ed	6362.347	Zn I	1000 Wh	500	1 Hz	-	6351.67	Er	6	-	-	Ed
6374.292	O	-	[70]	-	Fh	6362.286	Sc I	2	5	-	-	6351.425	Co I	25	-	-	-
6374.107	La II	6	15	-	-	6362.133	In II	-	[40]	-	Ps	6351.238	Ta	5	-	-	-
6373.86	Ho	2	-	-	Ed	6362.10	Hg	-	[15]	-	Lf	6351.2	bh Zr	6	-	-	L
6373.58	Kr I	-	[30]	-	Me	6362.093	Nd	10	-	-	-	6350.984	Pr	20 w	-	-	-
6373.474	Sm	2	-	-	-	6361.801	Sc	10 R	8	-	-	6350.75	Re I	100 R	-	-	Me
6373.424	Re	2 h	-	-	-	6361.80	Er	4	-	-	Ed	6350.74	Br I	-	-	[200 I]	Ks
6373.276	Eu	5 W	-	-	-	6361.740	In II	-	[20]	-	Ps	6350.44	Gd	10	-	-	Ks
6373.27	Cu II	-	5	-	Sh	6361.7	bh Sc	2	-	-	Me	6350.044	Eu	600 W	-	-	-
6373.055	Ta	50	-	-	-	6361.492	In II	-	[20]	-	Ps	6349.766	Mn	15	-	-	Si
6373.008	U	4	-	-	-	6361.430	Nd	10	-	-	-	6349.7	Te I	-	-	[18 w]	Rd
6372.987	Ce	6	-	-	-	6361.269	V I	5	2	-	-	6349.478	V I	15	8	-	-
6372.776	Nd	3	-	-	-	6361.076	W	3	1	-	-	6349.240	Sm	4	-	-	-
6372.71	Yb	6	-	-	Me	6360.869	Nd	5	-	-	-	6349.20	A I	-	-	[2]	Me
6372.69	Er	4	-	-	Ed	6360.839	Ta	100	-	-	-	6348.98	Cb	8	2	-	Me
6372.688	Sm	2	-	-	-	6360.798	Ni I	5 h	-	-	-	6348.95	Hg	-	-	[5]	Lf
6372.59	Ho	10	-	-	Ed	6360.466	Eu	4	-	-	-	6348.949	Gd	4	-	-	-
6372.486	Ce	5	-	-	-	6360.238	La I	15	-	-	-	6348.86	Se	-	-	[30]	Bt
6372.469	U	50	-	-	-	6360.216	Ce	4	-	-	-	6348.743	Nd	2	-	-	-
6372.357	Mo	5	2	-	-	6359.93	Cd II	10	50	-	Vs	6348.559	Th	3	3	-	-
6371.936	Th	4	-	-	-	6359.896	Ti I	5	-	-	-	6348.50	F I	-	-	[200]	En
6371.90	Sm II	15	-	-	-	6359.83	Hf	1	2	-	Me	6348.358	Dy	2	-	-	-
6371.76	I I	-	[100]	-	Ev	6359.78	Dy	2	-	-	Ks	6348.34	I	-	-	[50]	Bl
6371.75	Ti I	2	-	-	Rl	6359.5	bh Yt	8	-	-	Me	6348.27	A	-	-	[2]	Rt
6371.632	Er	4	-	-	-	6359.5	Sb	-	10	-	Dv	6347.827	Co	125	-	-	-
6371.472	W	6 s	-	-	-	6359.305	U	30	-	-	-	6347.824	Nd	2	-	-	-
6371.105	Ce	10	-	-	-	6359.211	Ti I	2	-	-	-	6347.721	Pr	3	-	-	-
6371.09	Si	2	30	-	Ks	6359.19	Se	-	[5]	-	Bl	6347.62	Hf	1	2	-	Me
6371.029	Sm	5	-	-	-	6359.19	I I	-	[60]	-	Ev	6347.31	Ho	2	-	-	Ed
6370.814	Mn	4 h	-	-	Sl	6359.129	W	2	-	-	-	6347.17	Er	8	-	-	Ed
6370.62	Se II	-	[30]	-	Bl	6359.043	Pr	40 w	-	-	-	6347.127	Pr	5	-	-	-
6370.383	Ni I	3	-	-	-	6358.818	V I	5	3	-	-	6347.1	N II	-	-	[5]	Fl
6370.337	W	3	1	-	-	6358.590	Fe I	8 h	6 h	-	-	6347.06	Mg II	10	2	-	Lr
6370.15	Ca	4	-	-	Ad	6358.37	Se I	-	[15]	-	Rd	6347.01	Si	2	50	-	Sy
6369.962	Sr	25	5	-	-	6358.26	Gd	4 h	-	-	Ks	6346.748	Pr	3 w	-	-	-
6369.9	bh Yt	10	-	-	Me	6358.137	La II	10	15	-	-	6346.66	Kr I	-	-	[20]	Me
6369.873	U	5	-	-	-	6358.09	Cu I	8	-	-	Az	6346.64	Gd	30	-	-	Ks
6369.63	Dy	2	-	-	Ks	6357.90	Ru	4	-	-	Me	6346.539	Nd	5	-	-	-
6369.577	A I	-	[30]	-	Ms	6357.45	Cu II	-	15	-	Sh	6346.52	Zr II	10	2	-	-
6369.34	S	-	[50]	-	Bl	6357.36	Hf	1	2	-	Me	6346.505	Sm	3	-	-	-
6369.243	Eu	300	-	-	-	6357.298	V I	10	3	-	-	6346.320	Nd	3	-	-	-
6369.144	Th	2	-	-	-	6357.269	Sm	2	2	-	-	6346.272	U	2	-	-	-
6368.78	Gd	10 r	-	-	Ks	6357.237	Pr	10 w	-	-	-	6346.24	Cb	6	2	-	Me
6368.41	Sm	4	-	-	Kn	6357.215	Mo	40	10	-	-	6346.02	Ta	40	-	-	-
6368.279	Sm II	50 d	-	-	-	6357.190	Sm	50	1	-	-	6346.0	Eu	10	-	-	Kn
6368.26	Kr I	-	[4]	-	Me	6357.0	N II	-	[30]	-	Fl	6345.989	Th	3 wh	-	-	-
6368.13	Se II	-	[30]	-	Bt	6356.87	F I	-	[2]	-	Gl	6345.955	Sb	4	-	-	Wt
6367.668	U	2	-	-	-	6356.545	Nd	2	-	-	-	6345.749	Sr I	25	4	-	-
6367.431	Sm	10	-	-	-	6356.434	La I	5	-	-	-	6345.74	Yb	-	7	-	Me
6367.34	I I	-	[70]	-	Ev	6356.35	Xe II	-	[300]	-	Hu	6345.51	Te	-	-	[30]	Bl
6367.10	Te	-	[70]	-	Bl	6356.3	bh Zr	6	-	-	L	6345.35	Lu	60	4	-	Me
6366.753	Nd	4	-	-	-	6356.139	Ta	100	-	-	-	6345.221	Zr I	15	-	-	-
6366.74	Eu	5 W	-	-	Kn	6356.082	Mn	8	-	-	Sl	6345.02	Yb	15 h	-	-	Me
6366.572	Er	4	-	-	-	6355.947	Nd	3	-	-	-	6345.0	Pb II	-	-	[25]	Ea
6366.483	Ni I	15	-	-	-	6355.904	W	3	-	-	-	6344.98	Xe I	-	-	[2 h]	Me
6366.354	Ti I	80	-	-	IKs	6355.885	Eu	200	-	-	-	6344.938	Zr	4 hl	-	-	-
6366.282	O	-	[50]	-	Fh	6355.77	Xe I	-	[20]	-	Me	6344.9	bh Zr	18	-	-	L
6366.267	Sm	2	-	-	-	6355.66	I I	-	[15]	-	Ev	6344.831	Sc I	5	6	-	-
6366.00	Lu	15	-	-	Me	6355.40	Yb	2	50 h	-	Me	6344.61	Kr II	-	-	[4 h]	Me
6365.79	Lu	10	-	-	Me	6355.357	Sm	8	-	-	-	6344.153	Fe I	5 h	2 h	-	-
6365.554	Nd	15	-	-	-	6355.105	Dy	2	-	-	-	6344.110	Mn	20	-	-	Si
6365.518	Cs I	2	-	-	Ms	6355.039	Fe I	15 h	8 h	-	-	6343.963	Ce	15	-	-	-

6343.9—6313.2 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
6343.96	Xe II	-	[200]	-	Hu	6333.211	La I	2	-	-	-	6324.436	Eu	10	-	-	-
6343.938	Pr	10 w	-	-	-	6333.21	A	-	-	[4]	-	6324.38	Te	-	-	[5]	Bl
6343.80	Hg	-	[15]	-	Lf	6332.977	Rh I	8	-	-	-	6324.3	bh Zr	6	-	-	L
6343.77	Hf II	1	4	-	Me	6332.907	Ta	50	-	-	-	6323.6	bh F	5	-	-	L
6343.358	Sm	2	-	-	-	6332.51	A	-	-	[4]	Rt	6323.542	Mo	12	2	-	-
6343.34	Dy	4	-	-	Ke	6332.3	bh F	2	-	-	L	6323.23	Dy	2	-	-	Ks
6343.057	Nd	2	-	-	-	6332.24	Er	4	-	-	Ed	6322.94	Co I	2 h	-	-	Me
6342.861	Th	15	-	-	-	6332.227	Sc	20 r	3	-	-	6322.867	Nd	3	-	-	-
6342.55	Dy	2	-	-	Ks	6332.220	Sb	6	-	-	Wt	6322.737	Sc I	2	4	-	-
6342.388	W	2	-	-	-	6332.21	Mg	2 h	6	-	-	6322.691	Fe I	8 h	8 h	-	-
6342.082	Sc II	2	5	-	-	6332.2	bh C	-	-	-	L	6322.519	Sm	4	-	-	-
6342.0	bh Pb	3	-	-	L	6332.05	Se	-	-	[15]	Bl	6322.42	Kr II	-	-	[4]	Me
6341.70	Cl	-	[10]	-	Ks	6331.979	Ce	5 h	-	-	-	6322.38	I I	-	-	[30]	Bl
6341.683	Ba	90	50	-	IKs	6331.92	Si	2 h	-	-	Ks	6322.368	U	6	-	-	-
6341.572	Sm	2	-	-	-	6331.889	Nd	3	-	-	-	6322.367	Pr	30 w	-	-	-
6341.507	Nd	15	-	-	-	6331.77	Tb	4	-	-	Ed	6322.165	Ni I	3	-	-	-
6341.38	Dy	2	-	-	Ks	6331.731	Sm	3	-	-	-	6321.89	Re I	100 w	-	-	Me
6341.173	Ta	50	-	-	-	6331.68	Tb	8	-	-	Ed	6321.79	Sr I	4	-	-	-
6341.09	I	-	[30]	-	Bl	6331.50	Xe I	-	-	[20]	Me	6321.74	Sm	60	-	-	-
6340.803	Co	10	-	-	-	6331.449	W	2	-	-	-	6321.59	Tb	4	-	-	Ed
6340.71	Hf	1	2	-	Me	6331.412	Th	3	-	-	-	6321.43	Sm	3	-	-	Kn
6340.686	Ce	4	-	-	-	6331.36	Gd	15	-	-	Ks	6321.348	Zr I	12	-	-	-
6340.67	N II	4	-	[50]	Fl	6331.339	Sm	4	-	-	-	6321.247	Ce	2	-	-	-
6340.66	Er	4	-	-	Ed	6331.17	Sm	4	-	-	Ks	6321.229	V I	5	5 h	-	Me
6340.361	Zr I	8	-	-	-	6331.10	Dy	2	-	-	Ks	6321.218	Nd	2	-	-	-
6340.055	Sm II	25	-	-	-	6330.901	Ne I	-	-	[150]	Ps	6320.854	Sc II	3	-	15	-
6340.001	Nd	5	-	-	-	6330.9	bh F	2	-	-	-	6320.82	I	-	-	[50]	Bl
6339.981	Ta	5	-	-	-	6330.766	U	6	-	-	-	6320.63	Er	4	-	-	Ed
6339.97	I II	-	[100 h]	-	Bl	6330.619	Ru	20	-	-	-	6320.60	I I	-	-	[100]	Db
6339.904	Mo	15	2	-	-	6330.45	I	-	-	[50]	Ev	6320.411	Co I	80	-	-	-
6339.8	Pb II	-	[15]	-	Ea	6330.448	La I	3	-	-	-	6320.41	I I	-	-	[50]	Db
6339.743	Sm	3	-	-	-	6330.167	Nd	15	-	-	-	6320.392	La II	70	-	100	-
6339.57	Ba	5	-	-	Bu	6330.157	Sm	10 d	-	-	-	6319.76	Sb II	-	-	[10]	Lg
6339.52	I	3	-	[300]	Ev	6330.101	Cr I	200	8	-	-	6319.686	Nd	5	-	-	-
6339.458	Th	3	-	-	-	6330.04	Te	-	-	[5]	Bl	6319.530	Rh I	50	-	-	-
6339.39	Si	2	2	-	Sy	6329.97	Cd I	30	-	-	Ps	6319.49	Sm I	2	-	-	Kn
6339.26	La I	3	-	-	-	6329.71	Si	2	1	-	Sy	6319.240	W	5	-	-	-
6339.148	Ni I	50	-	-	-	6329.6	bh F	5	-	-	L	6319.19	Sb II	4	12	-	Kz
6339.088	V I	25	8	-	-	6329.428	Ce	3	-	-	-	6319.17	Er	4	-	-	Ed
6338.97	I I	-	[100]	-	Db	6329.376	Sm II	8	-	-	-	6319.08	Mg	2 h	-	-	Lr
6338.898	Sm	5 h	-	-	-	6329.23	Dy	2	-	-	Ks	6318.567	Ce	2	-	-	-
6338.838	Nd	3	-	-	-	6329.222	Sm	8	-	-	-	6318.561	Eu	12	-	-	-
6338.750	U	4	-	-	-	6328.86	Hf	1	2	-	Me	6318.55	Mg I	2 h	-	-	Lr
6338.14	Se II	-	[15]	-	Bl	6328.845	Sm II	10	-	-	Fl	6318.4	bh Yt	3	-	-	Me
6338.13	Yt	5	5	-	-	6328.6	N II	-	-	[5]	-	6318.369	Pt	30	-	-	-
6338.12	Dy	2	-	-	Ks	6328.465	Nd	3	-	-	-	6318.33	Hf	3	5	-	Me
6338.1	bh Yt	10	-	-	Me	6328.3	bh F	5	-	-	L	6318.260	La I	10	-	-	-
6338.10	Hf	4	7	-	Me	6328.173	Ne I	-	-	[300]	Ps	6318.062	Xo I	-	-	[500]	IMe
6338.02	I	-	[100]	-	Ev	6327.991	Sm	8	-	-	-	6318.027	Ti I	50	-	-	-
6338.001	In II	-	[5]	-	Ps	6327.603	Ni I	25	-	-	-	6318.022	Fe I	40	25 h	-	S
6337.969	Sm	2	-	-	-	6327.49	Ir	3	-	-	-	6318.00	Cu II	-	3	-	Sh
6337.952	Co I	5	-	-	-	6327.47	Sm II	100	-	-	Kn	6317.819	Sm I	2	-	-	-
6337.88	La II	3	2	-	-	6327.434	Cr	8 s	-	-	-	6317.703	Nd	3	-	-	-
6337.85	Tb	4	-	-	Ed	6327.268	Th	10	-	-	-	6317.6	bh Zr	2	-	-	L
6337.628	Th	2	-	-	-	6327.0	bh F	10	-	-	L	6317.5	bh Sc	3	-	-	Me
6337.58	Xe I	-	[8 hl]	-	Me	6326.952	Nd	3	-	-	-	6317.40	Sm	2	-	-	Kn
6337.4	Au I	2	-	-	MI	6326.87	Se I, II	-	-	[10]	Bl	6317.3	Sr	4 wh	4	-	Hp
6337.364	In II	-	[12]	-	Ps	6326.87	Br	-	-	[8]	Bl	6317.24	Dy	2	-	-	Ks
6337.212	Ce	8	-	-	-	6326.839	V I	15	3	-	-	6317.18	Gd	10	-	-	Ks
6336.90	Ra I	-	[500]	-	Rs	6326.568	Ta	3	-	-	-	6316.94	Sm	3	-	-	Kn
6336.839	Fe I	60	35 h	-	-	6326.577	Pt	50	-	-	-	6316.857	Mo	4	2	-	-
6336.566	In II	-	[20]	-	Ps	6326.358	Th	4	-	-	-	6316.730	Ru	4	-	-	-
6336.552	U	2	-	-	-	6326.284	Sm	3	-	-	-	6316.47	Hg	-	-	[15]	Lf
6336.31	Gd	10	-	-	Ks	6326.204	Cs I	-	5	-	Ms	6316.2	bh Yt	8	-	-	Me
6336.31	Ge II	-	10	-	Lg	6326.11	Er	10	-	-	Ed	6316.1	bh Sc	2	-	-	Me
6336.121	Ru	5	-	-	-	6326.10	Cu	-	3	-	Sh	6315.94	Hf II	1	5	-	Me
6336.104	Ti I	80	-	-	IKs	6326.08	Sm	2	-	-	Kn	6315.817	La II	4	25	-	-
6335.783	Eu	200	-	-	-	6325.923	La I	30	-	-	-	6315.779	Sm	15	-	-	-
6335.72	Yb	8	-	-	Me	6325.9	bh F	10	-	-	L	6315.779	Co I	2 h	-	-	-
6335.70	Al II	-	[25]	-	Sy	6325.81	Xe I	-	-	[2]	Me	6315.310	Fe I	5 h	-	-	-
6335.5	bh Yt	4	-	-	Me	6325.78	Cb	6	2	-	Me	6315.063	Mn	5	-	-	-
6335.50	Br I	-	[5]	-	Ks	6325.582	Sm	50 d	-	-	-	6314.98	Co	2 h	-	-	Dn
6335.39	Sm	3	-	-	Kn	6325.57	Se I	-	-	[500]	Rd	6314.97	Xe I	-	-	[15]	Me
6335.369	Ce	15	-	-	-	6325.45	Cu I	20	-	-	Az	6314.710	Zr I	6	-	-	-
6335.335	Fe I	50	20 h	-	S	6325.22	Ti I	40 w	-	-	Rl	6314.675	Ni I	300	-	-	-
6335.107	Mo	4	2	-	-	6325.19	Cd I	100	-	-	Wd	6314.61	Hg	-	-	[10]	Lf
6334.91	Tb	6	-	-	Ed	6325.11	Se I	-	-	[30]	Rd	6314.582	Sm	3	-	-	-
6334.55	Hf	1	2	-	Me	6325.083	Ta	100	-	-	-	6314.529	Co I	50	-	-	-
6334.438	Ir	20	-	-	-	6324.781	Nd	2	-	-	-	6313.789	Eu	25 W	-	-	-
6334.4279	Ne I	-	[1000]	-	S	6324.78	Yb	3	2	-	Me	6313.692	Ne I	-	-	[150]	Ps
6334.2	Ga II	-	[100]	-	Sy	6324.7	bh F	10	-	-	L	6313.554	Zr II	6	1	-	-
6333.97	Xe I	-	[40 hl]	-	Me	6324.682	O I	-	-	[30]	Fh	6313.46	Hf	2	3	-	Me
6333.896	Nd	2	-	-	-	6324.665	V I	8	4	-	-	6313.235	Nd	4	-	-	-
6333.820	La I	3	-	-	-	6324.463	U	2	-	-	-	6313.218	Cr	3	-	-	-
6333.58	I	-	[30]	-	Ev	6324.45	A	-	-	[6]	Rt	6313.20	Sm	2	-	-	Kn

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
6313.12	I I	-	[30]	Db	6303.965	In II	-	[20]	Pt	6295.557	Ce	20	-	-
6313.047	Co I	50	-	-	6303.90	Sm	2	-	Kn	6295.5	hh Yt	10	-	Me
6313.024	Zr I	200	-	-	6303.830	In II	-	[12]	Pt	6295.4	hh F	80	-	L
6312.83	Cu II	-	20	-	6303.754	Ti I	200	-	IKs	6295.268	V	2	-	-
6312.8	Au I	8	-	MI	6303.743	Ir	5	-	-	6295.251	Ti I	10	-	-
6312.718	Nd	2	-	-	6303.66	Kr II	-	[100]	Me	6295.217	Ru	5	-	-
6312.68	S	-	[1000]	BI	6303.5	hh F	150	-	L	6294.45	Xe I	-	[15]	Me
6312.55	I I	-	[5]	Ev	6303.454	Re	10	-	-	6294.425	Nd	2	-	-
6312.240	Ti I	80	-	IKs	6303.42	Se I	-	[1000]	Ms	6294.17	Rh I	3	-	Me
6312.237	Ta	5	-	-	6303.395	Eu II	700	-	-	6294.08	I I	-	[300]	Ev
6312.122	Cb	6	1	-	6303.28	Yb	3	4	Me	6293.908	Sm	8 d	-	-
6312.11	Rn I	-	[2]	Rs	6303.260	Th	3	2	-	6293.766	Ne I	-	[100]	Ps
6311.85	Hf	4	6	Me	6303.240	W	10	2	-	6293.61	Te	-	[100]	BI
6311.8	hh Mg	3	-	-	6303.173	In II	-	[5]	Ps	6293.565	La I	30	-	-
6311.56	Sm	2	-	Kn	6303.15	Sm	40	-	Kn	6293.4	hh F	80	-	L
6311.500	V I	10	-	-	6302.764	Sb II	-	[20]	Lg	6293.383	Rh I	10	-	-
6311.5	Pb II	-	[40]	Ea	6302.7	hh Yt	2	-	Me	6293.347	U	15	-	-
6311.46	Xe II	-	[30 hl]	Hu	6302.526	In II	-	[5]	Ps	6293.045	Sc I	2 h	10	-
6311.292	Cu II	-	30	Sh	6302.511	Fe I	15 h	15 h	-	6292.960	Sm	9	-	-
6311.289	Ti I	5 h	-	-	6302.394	Sm II	25	-	-	6292.86	Gd	10	-	Ks
6311.28	Co	30 h	-	SI	6302.362	Pr	10	-	-	6292.86	Cu I	8	-	Az
6310.926	La II	10	100	-	6302.35	Sb	4 h	-	Kz	6292.843	Nd	20	-	-
6310.83	Sn	10	8	Wt	6302.2	Au I	4	-	MI	6292.827	V I	50	10	-
6310.75	Hf	1	2	Me	6302.2	hh F	150	-	L	6292.8	hh Zr	15	-	L
6310.487	Nd	50	-	-	6301.972	Nd	4	-	-	6292.649	Xe I	-	[50]	IMe
6310.297	Sm	3	-	-	6301.873	Sm	5	-	-	6292.5	hh F	50	-	L
6310.145	La	7	-	-	6301.753	Mo	15	-	-	6292.43	Tb	6	-	Ed
6310.043	Rb	-	50	Rr	6301.517	Fe I	50	50 h	-	6292.032	W	30	2	-
6310.017	Ce	20	-	-	6301.290	U	2	-	-	6292.032	U	10	-	-
6309.902	Sc II	5	25	-	6301.12	Sm II	50	-	Kn	6292.004	Nd	4	-	-
6309.89	Sm II	3	-	Kn	6300.99	Se I	-	[40]	Rd	6291.859	Co I	5	-	-
6309.702	V I	5	2	-	6300.988	Cu II	-	40	Sh	6291.85	Pl	5	-	Me
6309.579	Ta	100	-	-	6300.970	Nd	5	-	-	6291.82	Sm II	100 d	-	Kn
6309.24	Cb	6	2	Me	6300.9	hh F	150	-	L	6291.66	Dy	3	-	Ks
6309.14	A I	-	[8]	Ms	6300.86	Xe II	-	[125]	Hu	6291.6	hh F	50	-	L
6309.10	Gd	10	-	Ks	6300.697	Sc II	2	10	-	6291.484	U	3	-	-
6309.065	Ta	15	-	-	6300.50	I	-	[30]	BI	6291.48	Hf	2	4	Me
6309.	Rn	-	[10]	Wa	6300.50	Eu	4 W	-	Kn	6291.402	I II	-	[30]	Ke
6308.87	La	3	-	Me	6300.39	Dy	2	-	Ks	6291.341	Eu	250	-	-
6308.79	Er	15	-	Ed	6300.30	Ba	2 h	-	Lr	6291.26	Hg II	-	[50]	Ps
6308.7	hh Zr	2	-	L	6300.210	Ce	20	-	-	6291.029	W	4	1	-
6308.67	Hf	1	2	Me	6300.19	Sm II	50	-	Kn	6290.977	Fe I	5 h	-	-
6308.488	W	5	1	-	6300.09	Hg	-	[5]	Lf	6290.96	Kr II	-	[3 hl]	Me
6308.28	Sm II	10	-	Kn	6299.8	hh F	100	-	L	6290.743	Mo	15	4	-
6308.257	Nd	10	-	-	6299.764	Eu	500 W	-	-	6290.7	hh F	50	-	L
6308.243	La	3	-	-	6299.657	Zr I	50	-	-	6290.68	I I	-	[5]	Ev
6308.16	Yb	20	30	Me	6299.62	Sm	2 h	-	Kn	6290.39	Rh I	3	-	Me
6308.026	Ce	5	-	-	6299.54	Hf	2	5	Me	6290.13	Br I	-	[5]	Ks
6307.720	Re I	100 w	-	-	6299.514	Ce	4	-	-	6290.105	Re I	2 h	-	-
6307.662	A I	-	[30]	Ms	6299.45	Tm	20	20	Me	6289.928	Sm II	60	-	-
6307.266	La II	3	10 h	-	6299.41	Er	10	-	Ed	6289.9	hh F	30	-	-
6307.240	K II	-	[40]	Dm	6299.225	Rb I	300	50	IRz	6289.74	Ti II	-	[10]	El
6307.18	Rh I	3	-	Me	6299.05	Gd	15	-	Ks	6289.74	Gd	15	-	Ks
6307.06	Sm II	60	-	Kn	6299.0	hh Zr	4	-	L	6289.490	Th	3	-	-
6307.043	Nd	10	-	-	6298.7	hh F	100	-	L	6289.336	Ta	20	-	-
6306.980	U	4	-	-	6298.64	Te	-	[30]	BI	6289.2	hh F	30	-	L
6306.68	Ho	3	-	Ed	6298.596	W	3	1	-	6289.026	Pr	15 w	-	-
6306.628	Ce	10	-	-	6298.551	U	12	-	-	6288.90	W	2	-	Me
6306.399	Mo	4	-	-	6298.418	Nd	20	-	-	6288.72	Cu II	-	5	Sh
6306.318	Sm	3	-	-	6298.327	Rb I	1000	150	IRz	6288.61	Er	4	-	Ed
6306.17	Hf II	1	5	Me	6298.31	Xe II	-	[30]	Hu	6288.56	La I	4	-	Me
6306.1	hh F	100	-	L	6298.075	Ti I	2	-	-	6288.4	hh F	20	-	-
6306.047	Sc I	7	-	-	6297.797	Fe I	10 h	15 h	-	6288.34	Eu	300	-	Kn
6305.956	Cu II	-	15	Sh	6297.767	Sc I	2	3	-	6288.277	Ir	20	-	-
6305.784	Nd	3	-	-	6297.642	Sm	4	-	-	6288.1	hh F	2	-	L
6305.737	In II	-	[40]	Ps	6297.5	hh F	100	-	L	6288.024	Nd	3	-	-
6305.671	Sc I	80	60	-	6297.38	Yb	-	15	Me	6287.91	Ta	10	-	Ks
6305.555	In II	-	[30]	Ps	6297.08	I	-	[30]	Ev	6287.8	hh F	10	-	L
6305.51	S	-	[1000]	BI	6297.072	Nd	15	-	-	6287.773	Sm	2	-	-
6305.45	La II	12	5	-	6296.98	Eu	3	-	Kn	6287.750	La I	5	-	-
6305.36	Ho	20	-	Ed	6296.967	Co I	2 h	-	SI	6287.574	Nd	3	-	-
6305.262	Pr	9	-	-	6296.876	A I	-	[20]	Ms	6287.55	Ti II	-	[5]	El
6305.231	Nd	3	-	-	6296.85	Se	-	[3]	BI	6287.55	Sb	-	10 h	Kz
6305.19	Sm	40 d	-	Kn	6296.70	Br	-	[20]	Ks	6287.397	Rh	4	-	-
6305.14	Gd	100	-	Ka	6296.646	Ti I	30	-	-	6287.361	Ta	5	-	-
6304.846	In II	-	[30]	Ps	6296.5	hh F	100	-	L	6287.207	Nd	5	-	-
6304.8	hh F	150	-	L	6296.493	V I	35	30	-	6287.1	hh F	5	-	L
6304.7892	Ne I	-	[100]	S	6296.39	Xe II	-	[10 wh]	Hu	6287.06	S	-	[1000]	BI
6304.74	Sm	2	-	Kn	6296.33	Rn I	-	[6]	Rs	6287.026	Pr	3	-	-
6304.559	U	4	-	-	6296.216	Ru	15	-	-	6286.99	Se I	-	[30]	Ms
6304.540	In II	-	[20]	Ps	6296.14	Th	4	-	Ed	6286.96	Sm	2	-	Kn
6304.344	Zr I	6	-	-	6296.096	La II	50	150	-	6286.924	V I	-	-	Ed
6304.313	V I	5	-	-	6295.975	Sm	10	-	-	6286.86	Er	8	-	-
6304.240	Th	6	-	-	6295.949	Ti I	3	-	-	6286.831	Os	5	-	-
6304.026	Pr	8	-	-	6295.65	Sr	8	1	Hp	6286.609	Mo	7	2	-

6286.5—6257.2 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
6286.5	bh F	5	-	-	L	6276.99	Xe I	-	-	[4]	Me	6266.371	Ta	50 W	-	-	-
6286.417	Re	20 w	-	-	-	6276.77	Sm	10 d	-	-	Kn	6266.34	Sm	2 h	-	-	Kn
6286.404	Ce	3	-	-	-	6276.708	Cu II	-	-	10	Sh	6266.320	V I	25	-	3	-
6286.38	Cb	10	-	1	Me	6276.665	Rh I	8	-	-	Bl	6266.23	Se I	-	-	[200]	Rd
6286.35	S	-	-	[300]	Bl	6276.66	I	-	-	[15]	Bl	6266.21	Te	-	-	[70]	Bl
6286.26	Yb	8	-	-	Me	6276.627	Co I	40	-	-	-	6266.169	Th	8	-	-	-
6286.011	Xe I	-	-	[100]	Ime	6276.624	Cu II	-	-	10	Sh	6266.030	La I	80	-	-	-
6285.941	Eu	20 W	-	-	-	6276.5	bh F	20	-	-	L	6266.021	Ti I	12	-	-	-
6285.9	bh F	2	-	-	L	6276.48	Sm	2	-	-	Kn	6265.878	Mo	25	-	2	-
6285.897	W	30	-	2	-	6276.456	Ce	10	-	-	-	6265.655	Sm	2	-	-	-
6285.794	Nd	15	-	-	-	6276.310	Sc I	10	-	8	-	6265.627	Mn	4	-	-	Sl
6285.78	N	-	-	[3]	Du	6276.039	Ne I	-	-	[50]	Ps	6265.54	Dy	2 h	-	-	Ed
6285.5	bh F	2	-	-	L	6275.78	Sn	2	-	-	Wt	6265.32	Gd	4	-	-	Ks
6285.4	bh F	10	-	-	L	6275.43	N	6	-	[3]	Mt	6265.302	Xe I	-	-	[40]	Ime
6285.281	Th	12	-	1	-	6275.424	Cb	6	-	2 h	-	6265.140	Fe I	12 h	-	5 h	S
6285.165	V I	50	-	10	-	6275.133	Co I	25	-	-	-	6265.07	Re	2 h	-	-	Me
6285.149	Sm	10	-	-	-	6275.076	Sm	4	-	-	-	6264.91	Kr	-	-	[2 wh]	Me
6285.04	Br	-	-	[25]	Bl	6275.0	bh Yt	15	-	-	Me	6264.825	Ti I	2	-	-	-
6284.757	Sc I	4	-	6	-	6274.96	Er	8	-	-	Ed	6264.594	Eu	9	-	-	-
6284.726	Nd	3	-	-	-	6274.937	Os	3	-	-	-	6264.5	bh F	20	-	-	L
6284.47	Se I	-	-	[300]	Rd	6274.90	Ho	2	-	-	Ed	6264.346	O	-	-	[15]	Fh
6284.44	Sb	-	-	[4]	Lg	6274.79	Yb	100	-	150	Me	6264.269	Mo	15	-	2	-
6284.41	Xe II	-	-	[50]	Hu	6274.654	V I	50	-	8	-	6264.256	Ce	6	-	-	-
6284.30	N II	-	-	[30]	Fl	6274.6	bh Sc	4	-	-	Me	6263.670	Pt	4	-	-	-
6284.178	Sc I	2 h	-	5	-	6274.34	S	-	-	[30]	Bl	6263.437	Eu	10	-	-	-
6284.12	Sm	10 d	-	-	Ks	6274.297	Ta	3	-	-	-	6263.227	Nd	2	-	-	-
6283.96	Se I	-	-	[200]	Rd	6274.109	Th	25	-	3	-	6262.825	Co I	5 h	-	-	-
6283.478	Pt	10	-	-	-	6273.86	Dy	2 h	-	-	Ks	6262.56	Er	8	-	-	Ed
6283.428	In II	-	-	[5]	Ps	6273.763	La II	5	-	50	-	6262.539	Pr	9	-	-	-
6283.216	In II	-	-	[12]	Ps	6273.743	Ce	5	-	-	-	6262.519	Sm	3	-	-	-
6283.16	Se I	-	-	[200]	Rd	6273.707	Sm	5	-	-	-	6262.338	Pr	2	-	-	-
6283.1	bh F	20	-	-	-	6273.41	Te I	-	-	[18 s]	Bl	6262.311	Ta	5 h	-	-	-
6283.09	Ta	4	-	-	-	6273.392	Sm	15	-	-	-	6262.3	bh Sc	6	-	-	Me
6282.78	Ho	3	-	-	Ed	6273.389	Ti I	2	-	-	-	6262.296	La II	125	-	150	-
6282.634	Co I	300 W	-	-	-	6273.330	Cu II	-	-	60	Sh	6262.285	Eu	600	-	-	-
6282.624	Zr I	4	-	-	-	6273.23	Xe I	-	-	[10]	Me	6262.245	Sc I	5	-	8	-
6282.515	Nd	3	-	-	-	6273.147	So I	3	-	-	-	6261.826	Cu II	-	-	40	Sh
6282.50	Br	-	-	[5]	Ks	6273.026	Co I	70 w	-	-	-	6261.46	Rn I	-	-	[12]	Rs
6282.331	V	15	-	2	-	6273.018	Ne I	-	-	[70]	Ps	6261.420	Th	5	-	-	-
6282.29	Sm	2	-	-	Kn	6273.00	Dy	2 h	-	-	Ks	6261.314	O	-	-	[70]	Fh
6282.278	Pt	5	-	-	-	6273.0	bh Zr	4	-	-	L	6261.285	Cr	3	-	-	-
6281.997	Nd	10	-	-	-	6272.83	N I	-	-	[8]	Du	6261.225	V I	20	-	3	-
6281.94	Sm	8 d	-	-	Ab	6272.771	Nd	2	-	-	-	6261.212	Xe I	-	-	[50]	Ime
6281.935	Mo	8	-	-	-	6272.406	Sm	2	-	-	-	6261.099	Ti I	300	-	100	-
6281.81	Xe I	-	-	[5 h]	Me	6272.4	bh F	30	-	-	L	6261.09	Se II	-	-	[5 h]	Bt
6281.72	Se	-	-	[30]	Bt	6272.36	Tb	4	-	-	Ed	6261.088	Co	2 h	-	-	m
6281.40	Er	4	-	-	Ed	6272.052	Sr	15	-	-	Hp	6261.063	Th	15	-	2	-
6281.334	Ta	50	-	-	-	6272.051	Ce	20	-	-	-	6260.9	bh F	10	-	-	L
6281.306	Pr	25	-	1	-	6271.8	bh Sc	2	-	-	Me	6260.9	bh Zr	15	-	-	L
6280.91	V I	2	-	-	-	6271.737	Nd	4	-	-	-	6260.80	Yb	4	-	50	Me
6280.9	bh F	20	-	-	L	6271.63	Er	6	-	-	Ed	6260.768	Cb	20	-	3 h	-
6280.67	Rh I	3	-	-	Me	6271.476	Co I	5	-	-	-	6260.51	Te	-	-	[30]	Bl
6280.626	Fe I	-	-	-	-	6271.409	Re I	15	-	-	-	6260.38	Dy	3	-	-	Ks
6280.32	I	-	-	[50]	Bl	6271.374	Sm	4	-	-	-	6260.27	Gd	6	-	-	Ks
6280.195	U	10	-	-	-	6271.16	Yb	-	-	3	Me	6260.24	Re	20	-	-	Me
6280.169	Sc I	5 h	-	3	-	6271.09	Dy	2	-	-	Ks	6260.12	Sm	3	-	-	Kn
6279.84	Hf II	15	-	20	Me	6271.05	Hf II	1	-	3	Me	6260.017	Re	10	-	-	-
6279.767	Zr I	6	-	-	-	6271.046	Sm	8	-	-	-	6259.83	Se I, II	-	-	[40]	Bt
6279.757	Sc II	10	-	25	-	6270.82	Xe II	-	-	[250]	Hu	6259.76	Gd	5	-	-	Ks
6279.635	U	4	-	-	-	6270.76	Dy	2	-	-	Ks	6259.682	Sm	8	-	-	-
6279.493	Sm	10	-	-	-	6270.578	U	4	-	-	-	6259.615	Ni I	2	-	-	-
6279.42	N	-	-	[2]	Mt	6270.287	Ce	8	-	-	-	6259.44	Te	-	-	[30]	Bl
6279.170	Th	20	-	2	-	6270.273	Nd	5	-	-	-	6259.23	Br	-	-	[8]	Bl
6279.06	Sm	2	-	-	Kn	6269.817	Ce	4 W	-	-	-	6259.095	Dy	15	-	-	-
6278.9	bh C	-	-	-	L	6269.80	Dy	2	-	-	Ks	6258.964	Rh	4	-	-	-
6278.761	Re I	20	-	-	-	6269.417	Nd	4	-	-	-	6258.962	Se I	20	-	20	-
6278.675	Pr	9	-	-	-	6269.414	Os	8	-	-	-	6258.893	W	3	-	-	-
6278.64	A I	-	-	[6]	Ms	6269.19	W	2	-	-	Me	6258.81	Hf	10	-	20	Me
6278.43	Mo	2	-	-	-	6269.15	Se I	-	-	[80]	Rd	6258.796	Ne I	-	-	[100]	Ps
6278.336	Ta	15	-	-	-	6268.817	V I	30	-	5	-	6258.734	Ta	8	-	-	-
6278.253	Nd	2	-	-	-	6268.700	Ta	200	-	-	-	6258.733	Nd	8	-	-	-
6278.23	Sm	9 d	-	-	Ks	6268.688	U	6	-	-	-	6258.703	Ti I	300	-	250	I
6278.179	Au I	700	-	20	Qi	6268.55	I	-	-	[30]	Ke	6258.591	Ni I	6	-	-	-
6278.08	Rh	3	-	-	Me	6268.530	Ti	20	-	-	-	6258.572	V I	35	-	3	-
6277.7	Te I	-	-	[3]	Rd	6268.4	bh F	30	-	-	L	6258.103	Ti I	200	-	100	IKs
6277.565	Ta	2	-	-	-	6268.30	Cu I	40	-	-	Az	6257.990	Ce	8	-	-	-
6277.54	Xe II	-	-	[200]	Hu	6268.3	bh Ti	3	-	-	L	6257.93	Sm	2	-	-	Kn
6277.525	Ti I	2	-	-	-	6267.94	Er	6	-	-	Ed	6257.86	Cu II	-	-	5	Sh
6277.52	Kr	-	-	[2 h]	Me	6267.67	I	-	-	[15]	Bl	6257.84	Kr II	-	-	[4 ws]	Me
6277.464	Rh I	15	-	-	-	6267.33	Kr I	-	-	[2]	Me	6257.577	Co I	70	-	-	-
6277.286	Nd	5	-	-	-	6267.28	Sm II	150	-	-	Kn	6257.517	Nd	15	-	-	-
6277.249	Th	10	-	-	-	6267.062	Zr I	10	-	-	-	6257.489	I	-	-	[40]	Ke
6277.13	Yb	-	-	5	Me	6266.948	Eu	120	-	-	-	6257.4	bh F	20	-	-	L
6277.109	Ce	3	-	-	-	6266.5	bh Zr	6	-	-	L	6257.308	Nd	4	-	-	-
6277.02	I	-	-	[15]	Bl	6266.4950	Ne I	-	-	[1000]	S	6257.255	Zr I	30	-	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
6257.053	Co I	3	—	—	—	6246.465	K II	—	[30]	—	—	6238.411	Fe II	—	2	—	Kn
6257.00	Hf	10	30	—	Me	6246.412	Co I	5 h	—	—	—	6238.299	Sm	10	—	—	—
6256.899	V I	30	3	—	—	6246.4	bh Mg	3	—	—	—	6237.891	Zn I	8	—	—	IHz
6256.715	Nd	5	—	—	—	6246.335	Fe I	20	20 h	—	—	6237.740	W	2	—	—	—
6256.682	Ta	300	—	—	—	6246.26	I	—	[15]	—	—	6237.661	Sm II	50	—	—	—
6256.66	Sm II	80	—	—	Kn	6245.924	Eu	5	—	—	—	6237.655	Pt	5	—	—	—
6256.616	O	—	[30]	—	Fh	6245.83	Ba	2 h	2	—	—	6237.62	Si I	5 h	—	—	Ks
6256.6	bh F	20	—	—	L	6245.792	W	2	—	—	—	6237.458	Ce	10	—	—	—
6256.536	Sm	25	—	—	—	6245.71	Sm	2	—	—	Kn	6237.42	Mn	2	—	—	Si
6256.42	I II	—	[2]	—	Mu	6245.629	Sc II	6	30	—	—	6237.34	Si I	5 h	—	—	Ks
6256.369	Fe I	8 h	—	—	—	6245.61	Te	—	[150]	—	—	6237.338	Nd	5	—	—	—
6256.365	Ni I	600 w	10	—	IKs	6245.41	I I	—	[5]	—	—	6237.122	Co	2 h	—	—	—
6256.349	Ce	5	—	—	—	6245.30	Sm	2	—	—	Kn	6236.828	Pr	5	—	—	—
6256.108	Sm	8	—	—	—	6245.217	V I	5	1	—	—	6236.713	La I	15	—	—	—
6255.9	Te I	—	[12]	—	Rd	6245.11	Si I	2 h	—	—	Ks	6236.7	bh Yt	30	—	—	Me
6255.9	bh Yt	4	—	—	Me	6245.05	Al	—	5 wh	—	Gn	6236.56	Yb	2	—	—	Me
6255.85	Sm	10	—	—	Kn	6244.74	Si I	12 h	—	—	Ks	6236.40	I	—	[50]	—	Bl
6255.75	Ho	10	—	—	Ed	6244.61	Se	—	[30]	—	Bt	6236.354	Kr I	—	—	—	Ja
6255.60	Si I	3 h	—	—	Ks	6244.56	Si I	10 h	—	—	Ks	6236.276	V I	5	—	—	—
6255.54	I II	—	[30]	—	Ke	6244.555	Sc I	2	—	—	—	6236.24	Sm	2 d	—	—	—
6255.46	Dy	2	—	—	Ks	6244.55	I	—	[30]	—	Ev	6236.11	Sm	15	—	—	Kn
6254.96	Si I	2 h	—	—	Ks	6244.47	Ta	10 w	—	—	Ks	6235.9	bh F	10	—	—	L
6254.77	As II	—	10	—	Ro	6244.344	Pr	10	1	—	—	6235.67	Ru	4	—	—	—
6254.71	V	2 h	—	—	Me	6244.21	Sm II	40 d	—	—	Kn	6235.44	Pb	20	—	—	Wt
6254.686	Ta	5 w	—	—	—	6244.11	I	—	[15]	—	Ev	6235.40	Xe II	—	[10 h]	—	Hu
6254.68	F I	—	[3]	—	Gl	6244.084	Nd	35	—	—	—	6235.36	Lu	25	100	—	Me
6254.55	Si I	15 hl	—	—	Ka	6243.97	Pd I	2	—	—	Me	6235.36	Sm	15	—	—	Kn
6254.36	Sn	2 h	—	—	Wt	6243.86	Si I	10 h	—	—	Ks	6235.335	Ti	5	—	—	—
6254.29	W	12	—	—	—	6243.85	Ba	6	2	—	Bu	6235.27	Yb	2	—	—	Me
6254.261	Fe I	10	—	—	Bu	6243.7	bh F	5	—	—	L	6235.1	bh Zr	6	—	—	L
6254.25	Si I	25 h	—	—	Ks	6243.555	V I	10	2	—	—	6234.95	Sm	2	—	—	Kn
6254.216	U	3	—	—	—	6243.53	Kr	—	[2 w]	—	Me	6234.860	Th	3	—	—	—
6254.194	Ta	2	—	—	—	6243.39	A I	—	[6]	—	Ms	6234.86	Yb	—	5	—	Me
6254.1	bh F	10	—	—	L	6243.36	Al II	—	[80]	—	Pa	6234.855	La I	25	—	—	—
6253.940	Co I	2 h	—	—	m	6243.28	I	—	[15]	—	Ev	6234.37	Hg I	—	[15]	—	Lf
6253.718	Rh I	35	—	—	—	6243.24	Te	—	[15]	—	Bl	6234.320	U	10	—	—	—
6253.636	W	3	1	—	—	6243.220	Re I	50 w	—	—	—	6234.20	Sm II	10	—	—	Ks
6253.622	Ce	8	—	—	—	6243.145	Mn	3 h	—	—	Si	6234.17	Ho	10	—	—	Ed
6253.37	Co I	3	—	—	Az	6243.13	A II	—	[15]	—	Rt	6234.04	Xe II	—	[10 hw]	—	Hu
6253.043	Ru	2	—	—	—	6243.105	V I	35	4	—	—	6233.79	Cu I	3	—	—	Az
6252.561	Fe I	60	25 h	—	S	6242.914	Ce	8	—	—	—	6233.743	Eu	100	—	—	—
6252.34	Cl I	—	[5]	—	Ks	6242.811	V I	20	10	—	—	6233.73	Se II	—	[30]	—	Bl
6252.24	Sm	2	—	—	Ab	6242.81	I	—	[30]	—	Ev	6233.59	I	—	[15]	—	Ev
6252.2	bh F	10	—	—	L	6242.730	Ir	4	—	—	—	6233.586	Ba	18 w	3	—	Sz
6252.06	Re I	2	—	—	Me	6242.66	Cl I	—	[2]	—	Ks	6233.501	La I	15	—	—	—
6251.823	V I	70	8	—	—	6242.52	N II	—	[70]	—	Fl	6233.38	Yb	—	5	—	Me
6251.819	U	8	—	—	—	6242.48	Co	2	—	—	Me	6233.197	V I	30	4	—	—
6251.76	Cb	30	10	—	Me	6242.406	Sm	5	—	—	—	6233.1	bh Sc	6	—	—	Me
6251.73	Sm	5	—	—	Kn	6242.34	Lu	40	200	—	Me	6232.970	Th	10	3	—	—
6251.499	W	2	—	—	—	6242.24	Hg	—	[10]	—	Lf	6232.85	I	—	[50]	—	Bl
6251.05	Yt	3	2	—	—	6242.21	Se I	—	[80]	—	Rd	6232.68	Sm	2	—	—	Kn
6251.022	Pr	3 w	—	—	—	6242.09	Xe I	—	[8]	—	Me	6232.657	Fe I	5 h	5 Wh	—	—
6251.0	bh Yt	5	—	—	Me	6242.01	Sm	3	—	—	Kn	6232.552	U	2	—	—	—
6250.8	bh Pb	5	—	—	L	6241.907	Ce	6	—	—	—	6232.452	Ce	8	—	—	—
6250.65	Dy	2	—	—	Ks	6241.704	Oa	4	—	—	—	6232.437	Co I	25	—	—	—
6250.59	I II	—	[10]	—	Ke	6241.567	Sm	2	—	—	—	6232.3	bh F	5	—	—	L
6250.457	Eu	70	—	—	—	6241.39	Kr I	—	[10]	—	Me	6232.17	Sm	2 h	—	—	Kn
6250.431	Nd	10	—	—	—	6241.110	Pr	8 w	—	—	—	6231.905	In II	—	[5]	—	Pa
6250.3	bh F	10	—	—	L	6240.93	I	—	[15]	—	Ev	6231.76	Al II	—	[35]	—	Sy
6249.961	Sc I	10	10	—	—	6240.486	Sm	4	—	—	—	6231.70	Sm II	4	—	—	Kn
6249.929	La I	300	—	—	—	6240.37	Se II	—	[10]	—	Bt	6231.57	Cl I	—	[5]	—	Ks
6249.791	Ta	100	—	—	—	6240.363	Ti	2	—	—	—	6231.480	In II	—	[20]	—	Pa
6249.593	Ne I	—	[5]	—	Ps	6240.131	V I	20	2	—	—	6231.15	Rn I	—	[4]	—	Rs
6249.506	Co I	125	—	—	—	6240.1	Li I	300	—	—	Sd	6230.968	Co I	200 w	—	—	—
6248.95	Hf II	80	100	—	Me	6239.8	bh F	10	—	—	L	6230.91	A I	—	[4]	—	Ms
6248.80	Lu	10	—	—	Me	6239.778	Sc I	3 h	30	—	—	6230.84	Hf II	10	20	—	Me
6248.67	S	—	[15 h]	—	Bl	6239.73	A II	—	[4]	—	Rt	6230.8	bh Yt	5	—	—	Me
6248.52	Sr	4 h	—	—	Hp	6239.70	Se II	—	[2]	—	Kh	6230.80	Te	—	[300]	—	Bl
6248.40	A I	—	[15]	—	Ms	6239.64	F I	—	[300]	—	En	6230.74	Kr II	—	[10 hl]	—	Me
6248.276	Nd	15	—	—	—	6239.46	Ti II	—	15	—	MI	6230.736	V I	70	10	—	Me
6248.107	Sm	10	—	—	—	6239.410	Sc I	8	5	—	—	6230.728	Fe I	60	50	—	S
6247.990	Th	2	—	—	—	6239.28	Dy	2	—	—	Ks	6230.62	Dy	2	—	—	Ks
6247.99	Yb	3	—	—	Me	6239.189	Ta	5	—	—	—	6230.511	Eu	6	—	—	—
6247.8	bh F	10	—	—	L	6239.182	Zn I	8	—	—	IHz	6230.425	In II	—	[12]	—	Pa
6247.56	Fe II	1	8	—	Kn	6238.90	Sm	15	—	—	Ks	6230.322	Nd	2	—	—	—
6247.546	V I	2	1	—	—	6238.9	bh Zr	6	—	—	L	6230.115	Ni I	5	—	—	—
6247.322	Ta	2	—	—	—	6238.74	I I	—	[15]	—	Db	6230.022	Nd	3	—	—	—
6247.285	Co I	8	—	—	—	6238.702	Ce	10	—	—	—	6229.854	In II	—	[12]	—	Pa
6247.16	Ra II	—	[50]	—	Rs	6238.612	Fe	2	—	—	—	6229.82	Sm	2	—	—	Kn
6246.97	Yb	40	60	—	Me	6238.587	La I	25	—	—	—	6229.77	Dy	3	—	—	Ks
6246.86	Dy	2	—	—	Ks	6238.58	Hf	6	8	—	Me	6229.7	Pb II	—	[50]	—	Ea
6246.828	Nd	5	—	—	—	6238.499	Nd	20	—	—	—	6229.662	U	2 h	—	—	—
6246.76	Sm II	80	—	—	Kn	6238.49	Ti II	—	10	—	MI	6229.66	Hf II	2	3	—	Me
6246.734	Ne I	—	[100]	—	Ps	6238.44	Gd	2	—	—	Ks	6229.44	Re I	40 w	—	—	Me
6246.550	U	6	—	—	—	6238.42	Si I	4 h	—	—	Ks	6229.4	bh Sc	5	—	—	Me

6229.4—6200.5 Å.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
6229.4	bh Zr	18	-	L	6220.89	Sm	10 d	-	Kn	6210.83	F I	-	[5]	En
6229.39	I	-	[50]	Bl	6220.86	Se I, II	-	[5]	Rd	6210.811	Fe	-	-	-
6229.236	Fe I	2	-	-	6220.84	Xe I	-	[2]	Me	6210.75	Sm	3	-	Kn
6229.07	Sm	2	-	Kn	6220.806	Zr I	4	-	-	6210.70	Hf	6	8	Me
6228.945	Ce	10	-	-	6220.488	Ti I	100	30	-	6210.681	Nd	10	-	-
6228.852	In II	-	[12]	Ps	6220.30	Hg	-	[15]	Lf	6210.676	Sc I	20	25	-
6228.762	In II	-	[40]	Ps	6220.2	bh Sc	6	-	Me	6210.587	Pr	3	-	-
6228.69	Se II	-	[15]	Bl	6219.979	Ti	5	-	-	6210.454	Sm	3	-	-
6228.533	In II	-	[5]	Ps	6219.818	Cu II	-	30	Sh	6210.2	bh Zr	4	-	L
6228.430	Mo	5 wh	-	-	6219.794	Nd	2	-	-	6209.9	bh Yt	5	-	Me
6228.315	In II	-	[30]	Ps	6219.703	U	2	-	-	6209.592	Fe	2	-	-
6228.31	Sm	2	-	Kn	6219.636	Cb	6 Wh	2 h	-	6209.563	Ce	5	-	-
6228.234	Ce	8	-	-	6219.587	Rh	4	-	-	6209.478	Mo	8	2	-
6228.14	Lu	10	40	Me	6219.472	La	4	-	-	6209.42	Hf	2	-	Me
6228.038	In II	-	[20]	Ps	6219.289	Fe I	40	5	-	6209.352	Eu	5	-	-
6227.984	U	2 h	-	-	6219.17	Sm	4	-	Kn	6209.29	Er	4	-	Ed
6227.955	Nd	2	-	-	6218.99	Ta	5 w	-	-	6209.11	Xe I	-	[3]	Me
6227.919	In II	-	[20]	Ps	6218.76	Re	2 h	-	Me	6208.989	Sm	4	-	-
6227.815	In II	-	[20]	Ps	6218.314	V I	15	10 h	-	6208.989	Ce	12	-	-
6227.701	Os	30	-	-	6218.236	Sm	4	-	-	6208.65	Ho	5	-	Ed
6227.661	Ti	4	-	Bh	6218.211	La I	8	-	-	6208.46	Cu II	-	15	Sh
6227.241	Fe	5	-	-	6218.185	Nd	2	-	-	6208.428	Fe	2	-	-
6227.206	Nd	2	-	-	6218.082	Pr	5 w	-	-	6208.39	Sb II	-	8 wh	Kz
6227.18	Cl II	-	[6]	Ke	6218.0	bh Yt	40	-	Me	6208.372	Ta	10	-	-
6226.713	Sm	5	-	-	6217.987	Re I	40 w	-	-	6208.273	Mo	12	2	-
6226.502	Nd	20	-	-	6217.894	Mo	20	2	-	6208.239	Nd	10	-	-
6226.3	bh Ti	3	-	L	6217.887	Yt	10	2	-	6208.11	Yb	2	20 h	Me
6226.295	V	-	8	Me	6217.374	Ir	4	-	-	6208.009	Nd	5	-	-
6226.19	Al II	-	[25]	Sy	6217.289	Fe	2	-	-	6207.978	Dy	2	-	-
6225.95	Tb	4	-	Ed	6217.2813	Ne I	-	[1000]	S	6207.737	Th	3	-	-
6225.747	W	4	1	-	6217.27	Cs I	15 w	-	Me	6207.603	Eu	6	-	-
6225.742	Ne I	-	[50]	Ps	6217.147	Sm	12	-	-	6207.259	Fe	2	-	-
6225.7	bh F	5	-	L	6217.083	Ta	8	-	-	6207.251	V I	20	5	Me
6225.556	Sm	15	20	-	6216.910	Cu II	-	60	Sh	6207.218	Th	10	-	-
6225.48	Sm	3	-	Kn	6216.909	Sm	10 d	20	-	6207.20	Se I	-	[30]	Rd
6225.279	La I	3	-	-	6216.881	U	2	-	-	6207.116	Sm II	8	-	-
6225.250	Nd	2	-	-	6216.836	Ce	10	-	-	6206.95	Hf II	1	3	Me
6225.236	Sm	4	-	-	6216.82	Hf	2	6	Me	6206.830	Sm	25	-	-
6225.203	Ru	20	-	-	6216.688	Nd	8	-	-	6206.76	La	3	-	Me
6224.70	Sm	4	-	Ks	6216.64	Te	-	[50]	Bl	6206.309	Rb I	800	100	IRz
6224.518	Th	5	-	-	6216.59	Dy	2	-	Ks	6206.297	Xe I	-	[20]	IMe
6224.505	V I	50	5	-	6216.44	Sm	5	-	Ks	6206.29	Se II	-	[10]	Bl
6224.275	In II	-	[60]	Ps	6216.38	Cu I	8	-	Az	6206.239	Sm	2	-	-
6224.189	Zr I	6	-	-	6216.370	V I	60	10	-	6206.16	Xe	-	[100]	Hu
6224.187	W	3	1	-	6216.078	Ce	2	-	-	6206.110	Nd	5	-	-
6224.168	Xe I	-	[40]	IMe	6215.999	Pt	20	-	-	6205.837	Sm	5	-	-
6224.	Rn	-	[4]	Wa	6215.945	A I	-	[60]	Ms	6205.787	Ne I	-	[100]	Ps
6223.994	Ni I	30	-	-	6215.57	Yb	-	6	Me	6205.75	Xe I	-	[4]	Me
6223.681	Ce	3	-	-	6215.397	U	12	-	-	6205.503	Co I	3 h	-	-
6223.66	Cu I	15	-	Az	6215.284	Ti I	100	50	-	6205.35	Xe I	-	[6 h]	Me
6223.65	Yb	-	15	Me	6215.2	bh Ti	6	-	L	6204.869	I II	-	[70]	Ke
6223.641	Sm	4	-	-	6215.153	Fe	3	-	-	6204.640	Ni I	10	-	-
6223.612	Ta	2	-	-	6214.689	Zr I	18	-	-	6204.63	Er	4	-	Ed
6223.394	Nd	25	-	-	6214.678	Mo	7	2	-	6204.51	Sb	6	-	Wt
6223.372	Co I	10	-	-	6214.590	Zn II	3	[12]	-	6204.27	Cu II	-	15	Sh
6223.249	Ce	6	-	-	6214.35	La I	3	-	Me	6204.143	Zr I	4	-	-
6222.81	Hf II	6	10	Me	6214.10	Ca	-	2	Ad	6203.9	bh Zr	4	-	L
6222.8	bh Zr	2	-	L	6214.00	Sb	6	-	Wt	6203.878	Sm	20	-	-
6222.74	Sm	2	-	Kn	6213.91	I I	-	[70]	Db	6203.701	Co	2 h	-	-
6222.71	Kr I	-	[20]	Me	6213.878	Ne I	-	[150]	Ps	6203.7	Pb II	-	[5 d]	Ea
6222.694	Ta	2	-	-	6213.869	V I	50	3	-	6203.62	Sn	4	8	Wt
6222.61	A I	-	[4]	Rs	6213.85	Sm	4	-	Kn	6203.60	Gd	4	-	Ks
6222.595	Yt I	5	5	-	6213.67	Er	4	-	Ed	6203.514	W	15	1	-
6222.568	Sm	3	-	-	6213.443	Fe I	20	-	-	6203.510	La II	8	25	-
6222.4	bh Ti	4	-	L	6213.432	Dy	2	-	-	6203.50	Co	2 h	-	Me
6222.329	Co I	3	-	-	6213.248	Mo	12	-	-	6203.491	Th	8	1	-
6222.3	bh F	10	-	L	6213.17	I I	-	[70]	Ev	6203.389	U	3	-	-
6222.25	Tb	4	-	Ed	6213.062	Cb	10	10 h	-	6203.301	Co	2 h	-	Me
6222.173	U	8	-	-	6213.052	Zr I	20	-	-	6203.29	Te	-	[15]	Bl
6222.148	Nd	8	-	-	6212.87	Cs I	100	[10]	Me	6203.246	Re I	25	-	-
6221.958	Cb	20	5	-	6212.794	Nd	2	-	-	6203.20	Sb II	2 h	[25]	Lg
6221.87	Lu	500	1000	Me	6212.727	Pr	10 w	-	-	6203.08	Br I	-	[10]	Ks
6221.8	bh Yt	6	-	Me	6212.67	Dy	2	-	Ks	6202.981	Ne II	-	[15]	Ps
6221.578	Ti	3 h	-	-	6212.65	Sm	2	-	Kn	6202.85	Hf II	2	2	Me
6221.48	Te	-	[50]	Bl	6212.507	A I	-	[100]	Ms	6202.29	Te	-	[70]	Bl
6221.45	Sb	8	2 h	Wt	6212.500	Ce	5	-	-	6202.090	Ce	2	-	-
6221.41	Ti I	80	-	-	6212.229	Ti	18	-	-	6201.994	U	3	-	-
6221.36	Fe I	3 h	-	-	6212.055	Fe I	2	-	-	6201.744	Nd	15	-	-
6221.337	Ta	3	-	-	6211.94	Hf	2	-	Me	6201.49	Al II	-	[15]	Sy
6221.32	Sm	3	-	Kn	6211.61	Cl I	-	[5]	Ke	6201.49	Xe I	-	[3 h]	Me
6221.219	V I	3	1	-	6211.49	Te	-	[30]	Bl	6201.138	Sm	5	-	-
6221.150	Nd	2	-	-	6211.43	Tm	8	-	Me	6200.892	Xe I	-	[60]	IMe
6221.01	Er	12	-	Ed	6211.314	Ir	15	-	-	6200.75	Rn I	-	[12]	Rs
6220.94	Cu I	8	-	Az	6211.189	Co I	25	-	-	6200.743	Re	3	-	-
6220.94	Gd	5	-	Ks	6211.059	Ce	8	-	-	6200.52	I I	-	[50]	Db

Wave-length	Element	Intensities	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensities	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensities	Arc	Spk., [Dis.]	R
6200.424	Th	5	-	-	-	6191.2	bh C	-	-	-	L	6181.57	Al II	-	-	[10]	Sy
6200.327	Fe I	15	-	-	-	6191.186	Ni I	500	1	-	-	6181.44	Ti II	-	-	10	M
6200.30	Ra I	-	-	[1000]	Ra	6190.81	Yb	3	15	-	Me	6181.41	Tm	40	-	50	Me
6200.298	Ta	4 hl	-	-	-	6190.7	bh Yt	5	-	-	Me	6181.369	U	2 h	-	-	-
6200.075	Sm II	2	-	-	-	6190.657	Cr	5	-	-	-	6181.05	Sm II	50 d	-	-	Kn
6199.992	Rh I	25	-	-	-	6190.62	Sm	2	-	-	Kn	6181.030	Co I	10 h	-	-	-
6199.8	bh Yt	50	-	-	Me	6190.25	Br	-	-	[8]	Bl	6180.764	Nd	3	-	-	-
6199.66	Lu	40	125	-	Me	6190.1	bh Ti	3	-	-	L	6180.6	bh Sc	4	-	-	Me
6199.25	Dy	2	-	-	Ks	6189.70	Sm	5	-	-	Kn	6180.58	Te	-	-	[30]	Bl
6199.193	V I	100	8	-	-	6189.67	Dy	2	-	-	Ks	6180.455	Gd	30	-	-	-
6199.093	Rb II	-	100	-	Lp	6189.663	Ta	50	-	-	-	6180.365	Rh I	2	-	-	-
6198.8	Pb II	-	-	[5 d]	Ea	6189.460	Nd	3	-	-	-	6180.216	Fe I	6	-	-	-
6198.610	Nd	4	-	-	-	6189.399	Zr I	8	-	-	-	6180.093	Ni I	2	-	-	-
6198.438	Sc I	9	6	-	-	6189.349	V I	10	2	-	-	6179.98	Ti II	-	-	[100]	El
6198.417	U	2	-	-	-	6189.269	Ti	2	-	-	-	6179.852	Th	6	-	-	-
6198.385	Sm	20	-	-	-	6189.10	Xe I	-	-	[20]	Me	6179.84	Sm II	30 d	-	-	Kn
6198.260	Xe I	-	-	[100]	IMe	6189.076	Ne I	-	-	[70]	Ps	6179.665	Xe I	-	-	[125]	IMe
6198.22	Cd I	15	-	-	Ps	6189.07	Yb	2	-	-	Me	6179.650	W	2	-	-	-
6198.215	Th	6	-	-	-	6188.995	Co I	200 w	-	-	-	6179.419	Sm	10	-	-	-
6198.14	Sm	4	-	-	Kn	6188.987	Mo	12	2	-	-	6179.41	A I	-	-	[4]	Ms
6198.11	Cu II	-	5	-	Sh	6188.748	Fe	3	-	-	-	6179.071	Ta	30	-	-	-
6198.06	In	-	20	-	Sq	6188.702	W	2	-	-	-	6178.89	Sr	6	-	-	Ex
6198.047	Ce	8	-	-	-	6188.69	Cu II	-	20	-	Sh	6178.746	Eu	120	-	-	-
6197.854	Sm	2	-	-	-	6188.112	Th	3	1	-	-	6178.67	Sm	2	-	-	Kn
6197.837	Co I	5 h	-	-	-	6188.1	bh Sc	10	-	-	Me	6178.64	Sb	4 h	-	-	Wt
6197.75	Fe	2	-	-	-	6188.098	Eu	500 W	-	-	-	6178.591	Nd	15	-	-	-
6197.706	Nd	2	-	-	-	6188.091	La II	8	50	-	-	6178.386	Ce	4	-	-	-
6197.662	Mo	15	2	-	-	6188.024	Pd I	6	-	-	-	6178.303	Xe I	-	-	[150]	IMe
6197.395	Sm	2	-	-	-	6188.023	Fe I	2 h	-	-	-	6178.231	Zr I	8	-	-	-
6196.63	Xe II	-	-	[4 h]	Hu	6188.00	Sm II	1 h	10	-	Kn	6178.198	Nd	3	-	-	-
6196.583	Sm	3	-	-	-	6188.0	bh Zr	4	-	-	L	6177.958	Ce	3	-	-	-
6196.544	U	2	-	-	-	6187.977	Pr	4 w	-	-	-	6177.71	Se I	-	-	[80]	Rd
6196.43	Hg II	-	-	[12]	Lf	6187.94	Sm	30 d	-	-	Kn	6177.455	Sm	5	-	-	-
6196.350	W	5	1	-	Bk	6187.914	Re	2 h	-	-	-	6177.40	Br I	-	-	[40]	Ks
6196.33	Sb	6 h	-	-	Kz	6187.578	W	5	1	-	-	6177.258	Ni I	5	-	-	-
6196.280	Ce	4	-	-	-	6187.56	Te	-	-	[5]	Bl	6176.814	Ni I	400 w	-	-	-
6196.23	Dy	3	-	-	Ks	6187.498	Pr	3	-	-	-	6176.784	Ru	9	-	-	-
6196.204	Nd	4	-	-	-	6187.417	Sm	3	-	-	-	6176.585	Mn	2	-	-	Sl
6196.14	Kr	-	-	[3 wl]	Me	6186.979	Nd	2	-	-	-	6176.40	Sm	8 d	-	-	Kn
6196.11	Sm	3	-	-	Kn	6186.92	I	-	-	[15]	Bl	6176.36	Al	5 h	-	-	Wt
6195.957	W	5	1	-	-	6186.917	Ce	9	-	-	-	6176.168	Pd I	5	-	-	-
6195.61	Pd I	2	-	-	Me	6186.892	Rh I	30	-	-	-	6176.085	Nd	4	-	-	-
6195.546	Co	10	-	-	-	6186.860	Cu II	-	20	-	Sh	6175.85	S I	-	-	[40]	Fh
6195.51	I	-	-	[100]	Bl	6186.740	Ni I	30	-	-	-	6175.530	Mo	2	-	-	-
6195.435	Re	15 w	-	-	-	6186.60	Se I	-	-	[15]	Rd	6175.424	Ni I	300	-	-	-
6195.4	bh C	-	-	-	L	6186.6	bh Ti	5	-	-	L	6175.291	Ne I	-	-	[50]	Ps
6195.246	Ce	8	-	-	-	6186.48	Hg	-	-	[10]	Lf	6175.285	Ce	8	-	-	-
6195.21	Sm	2 h	-	-	Kn	6186.236	W	7	1	-	-	6175.2	bh Zr	2	-	-	L
6195.12	Lu	15	-	-	Me	6186.157	Co I	12	-	-	-	6175.029	Co I	2	-	-	-
6195.063	Eu	300	-	-	-	6186.15	Ti I	35	-	-	Me	6174.97	S	-	-	[30]	Fh
6195.05	Te	-	-	[5]	Bl	6186.00	Sb II	-	-	[6]	Lg	6174.96	Sm II	30 d	-	-	Kn
6194.91	Rn I	-	-	[4]	Ra	6185.79	Xe II	-	-	[3 wh]	Hu	6174.888	Ne I	-	-	[70]	Ps
6194.85	Yb	3	-	-	Me	6185.578	Fe	2 h	-	-	-	6174.6	bh Ti	3	-	-	L
6194.75	Cl I	-	-	[15]	Ks	6185.35	Kr II	-	-	[7 hl]	Me	6174.54	Ba	7	12	-	Lr
6194.52	Tb	4	-	-	Ed	6185.13	Hf	10	12	-	Me	6174.47	Ti I	2	-	-	Me
6194.407	Sm	10	-	-	-	6185.03	Xe II	-	-	[25]	Hu	6174.458	Sm	10	-	-	-
6194.265	U	2 h	-	-	-	6184.99	Bi	3 wh	-	-	Wt	6174.392	U	5	-	-	-
6194.07	Xe II	-	-	[250]	Hu	6184.73	Dy	2	-	-	Ks	6174.332	Pr	4 w	-	-	-
6193.89	Xe I	-	-	[2 h]	Me	6184.727	Th	4	-	-	-	6174.301	Nd	2	-	-	-
6193.851	Th	12	1	-	-	6184.57	Xe II	-	-	[30]	Hu	6174.194	La II	5	3	-	-
6193.672	Sc I	7	5	-	-	6184.536	Fe	3	-	-	-	6173.947	Sm	12	-	-	-
6193.64	Tb	4	-	-	Ed	6184.16	Xe I	-	-	[3]	Me	6173.930	Rh	10	-	-	-
6193.553	Co I	15	-	-	-	6184.125	Fe	3	-	-	-	6173.64	S I	-	-	[40]	Fh
6193.233	W	5	1	-	-	6183.907	Nd	20	-	-	-	6173.40	N II	-	-	[30]	Fl
6193.201	Mo	3	2	-	-	6183.75	Se I, II	-	-	[15]	Bl	6173.38	Dy	2	-	-	Ks
6193.14	Sm	10	-	-	Kn	6183.727	Fe	2	-	-	-	6173.339	Fe I	18	-	-	-
6193.108	Ta	30	-	-	-	6183.5	bh Ti	2	-	-	L	6173.13	Sm	3	-	-	Kn
6193.078	Ne I	-	-	[50]	Ps	6183.39	Te	-	-	[50]	Bl	6173.106	A I	-	-	[100]	IMe
6192.960	Zr I	20	-	-	-	6183.39	Al II	-	-	[20]	Sy	6173.1	bh Sc	2	-	-	Me
6192.9	bh Sc	10	-	-	Me	6183.32	Ho	3	-	-	Ed	6173.046	Eu I	600	-	-	-
6192.64	Sm	50	-	-	Kn	6183.24	Cb	-	2 h	-	Me	6172.914	U	4	-	-	-
6192.561	Ru I	9	-	-	-	6183.20	Er	6	-	-	Ed	6172.866	Ce	2	-	-	-
6192.50	Hf	2	4	-	Me	6183.169	Ne I	-	-	[5]	Ps	6172.821	Ne I	-	-	[15]	Ps
6192.349	U	2	-	-	-	6182.975	Nd	6	-	-	-	6172.81	S I	-	-	[5]	Fh
6192.282	Ce	4	-	-	-	6182.89	Sm II	60 d	-	-	Kn	6172.730	La II	15	-	-	-
6191.97	I I	-	-	[150]	Ev	6182.623	Th	12	-	-	-	6172.563	Sm	15	-	-	-
6191.895	Th	5	-	-	-	6182.420	Xe I	-	-	[300]	IMe	6172.531	Pt	15	-	-	-
6191.722	Yt I	8	5	-	-	6182.343	Pr	12	-	-	-	6172.28	A	-	-	[20]	Rt
6191.684	Nd	3	-	-	-	6182.28	Al II	-	-	[15]	Sy	6172.23	Rn I	-	-	[4]	Ra
6191.68	Ho	8	-	-	Ed	6182.2	bh Yt	60	-	-	Me	6172.08	Kr I	-	-	[2]	Me
6191.564	Eu	5	-	-	-	6182.146	Ne I	-	-	[150]	IMe	6172.020	Cu II	-	-	20	Sh
6191.562	Fe I	100	20 h	-	S	6181.94	Te	-	-	[15]	Bl	6171.88	Tb	4	-	-	Ed
6191.553	Pr	5 w	-	-	-	6181.9	Pb II	-	-	[30]	Ea	6171.872	U	30	-	-	-
6191.40	Xe I	-	-	[4 h]	Me	6181.88	Sm	15 d	-	-	Kn	6171.83	Te	-	-	[5]	Bl
6191.23	Sm	15 w	-	-	Kn	6181.626	Nd	3	-	-	-	6171.77	Kr II	-	-	[6 hs]	Me

6171.6—6146.9 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities					
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
6171.65	Yb	5	2		Me	6163.16	Sm	2	-	Kn	6155.062	Nd	15	-	-	-	
6171.49	Sn	10	10		Wt	6163.008	In II	-	[20]	Ps	6154.945	Sb	8 h	[40]	-	-	Lg
6170.98	Hg	-	[15]		Lf	6162.754	In II	-	[20]	Ps	6154.91	Cb	10 wh	10 h	-	-	Me
6170.955	Pd I	5	-			6162.54	Ho	3	-	Ed	6154.864	W	15	1	-	-	
6170.858	Ta	8	-			6162.533	In II	-	[20]	Ps	6154.81	Sm	2	-	-	-	Kn
6170.8	bh Yt	4	-		Me	6162.4	Te I	-	[3 w]	Rd	6154.60	Sn	12	25	-	-	Wt
6170.751	Mo	8	2			6162.377	Nd	8	-		6154.504	Ta	200	-	-	-	
6170.609	Ru	15	-			6162.340	In II	-	[12]	Ps	6154.24	Cu II	-	-	30	-	Sh
6170.568	Ni I	5	-			6162.25	Sm	2	-	Kn	6154.229	Na I	500	-	100	-	Hw
6170.538	Ta	5	-			6162.228	Au	10	5	Qi	6154.09	Ne	-	-	[70 w]	-	Za
6170.516	Dy	2	-			6162.204	U	3 h	-		6154.03	Tl II	-	-	[20]	-	El
6170.502	Fe I	15	-			6162.20	Ho	2	-	Ed	6154.019	Os	2 h	-	-	-	
6170.486	Nd	30	-			6162.2	bh Ti	2	-	L	6153.9	bh Sc	20	-	-	-	Me
6170.47	As II	-	150		Ro	6162.188	Pr	5	-		6153.9	bh Zr	8	-	-	-	L
6170.359	V I	30	3			6162.172	Ca I	40	45	I	6153.89	Te	-	-	[70]	-	Bl
6170.26	N I	-	[5]		Fl	6162.170	Co	60	-	Sl	6153.728	W	15	1	-	-	
6170.2	bh Zr	4	-		L	6162.168	Ce	8 w	-		6153.687	U	4	-	-	-	
6170.183	A I	-	[100]		IMe	6162.16	Xe I	-	[3]	Me	6153.225	Eu	8 W	-	-	-	
6170.05	Er	8	-		Ed	6162.14	Cl I	-	[10]	Ks	6152.788	Nd	2	-	-	-	
6170.03	Tl II	-	[5]		El	6161.90	I II	-	[2]	Mu	6152.571	Yb	60	80	-	-	
6169.947	Sm	3	-			6161.862	In II	-	[20]	Ps	6152.544	Ta	60	-	-	-	
6169.818	Th	10	-			6161.74	Br	-	[8]	Bl	6152.273	U	4	-	-	-	
6169.58	Re	2	-		Me	6161.508	Nd	10	-		6152.070	Xe I	-	-	[20]	-	IMe
6169.556	Co	2 h	-			6161.434	W	5	1	-	6152.06	Ru I	4	-	-	-	Me
6169.556	Ca I	40	20		I	6161.289	Ca I	10	6	IWg	6151.984	Th	10	-	-	-	
6169.40	Pb	10 h	-		Wt	6161.194	Pr	50	2	-	6151.85	W	5	-	-	-	
6169.168	Nd	2	-			6161.149	In II	-	[60]	Ps	6151.730	Ce	10	-	-	-	
6169.147	Sm	5	-			6160.760	Na I	500	100		6151.72	Yt	3	-	-	-	Me
6169.106	W	6	1			6160.70	Hf	-	4	Me	6151.7	bh Yt	5	-	-	-	Me
6169.052	Ca I	25	15		I	6160.5	bh Pb	4	-	L	6151.69	Al	5 h	-	-	-	Wt
6168.85	Co I	2 h	-		Sl	6160.42	Sm II	40 d	-	Kn	6151.632	Fe I	8	-	-	-	
6168.80	Kr II	-	[50]		Me	6160.2	Te I	-	[12 w]	Rd	6151.48	Dy	2	-	-	-	Ks
6168.73	Br	-	[3]		Bl	6160.196	Zr I	8	-		6151.38	Kr I	-	-	[20]	-	Rs
6168.433	Dy	6	-			6160.1	Au I	20	-	MI	6151.19	Ra I	-	-	[30]	-	Me
6168.335	Sm I	30	-		Kn	6160.0	Pb II	-	[50]	Ea	6151.14	Te	-	-	[50]	-	Bl
6168.1	bh Cr	2	-		L	6159.94	Lu	50	200	Me	6151.13	Gd	15	-	-	-	Ks
6168.096	Nd	5	-			6159.817	Ce	8	-		6151.02	Tl II	-	-	[10]	-	El
6167.82	N II	-	[50]		Fl	6159.622	Rb I	400	-	IRz	6150.94	Sm	3	-	-	-	Kn
6167.649	La I	3	-			6159.56	Sm	40	30	Kn	6150.67	Dy	2	-	-	-	Ks
6167.38	Tl II	-	[20]		El	6159.3	bh Ti	2	-	L	6150.64	Yb	30 h	-	-	-	Me
6167.349	Ta	8	-			6159.281	Nd	3	-		6150.42	Cu II	-	-	20	-	Sh
6167.24	Te	-	[15]		Bl	6159.093	Pr	3	-		6150.303	Ne I	-	-	[100]	-	Ps
6167.03	Ra I	-	[70]		Rf	6158.967	Sr	6	-	Hp	6150.281	Nd	3	-	-	-	
6166.84	Te	-	[100]		Bl	6158.940	Ce	3	-		6150.154	V I	40	5	-	-	
6166.76	Sm	8 d	-		Ks	6158.87	Rh I	2	-	Me	6150.11	Eu	5 W	-	-	-	Kn
6166.673	Nd	20	-			6158.841	Ta	80 w	-		6149.988	In II	-	-	[5]	-	Ps
6166.50	Hg	-	[5]		Lf	6158.72	Hf II	1	2	Me	6149.94	Sm	3	-	-	-	Kn
6166.443	Ca I	15	5		IWg	6158.708	Eu	3 W	-		6149.743	Ti I	30	-	-	-	
6165.945	Pr	50	2			6158.47	Co I	2 h	-	m	6149.73	F I	-	-	[10]	-	En
6165.857	Sm	6	-			6158.442	Mo	10	3	-	6149.675	In II	-	-	[12]	-	Ps
6165.7	Cu I	3 h	-		Ks	6158.44	Ho	3	-	Ed	6149.67	Sn	15	50	-	-	Wt
6165.699	La I	100	-			6158.32	Dy	3	-	Ks	6149.585	Ce	5	-	-	-	
6165.657	U	2	-			6158.20	O I	-	[1000]	Ps	6149.50	Hg II	-	-	[200]	-	Ps
6165.656	Nd	8	-			6158.20	Br I	-	[10]	Ks	6149.375	In II	-	-	[20]	-	Ps
6165.61	Sm	2 h	-		Kn	6158.03	Os	4 h	-	Me	6149.277	Nd	20	-	-	-	
6165.549	Dy	4	-			6158.00	Cu II	-	5	Sh	6149.27	Eu	5	-	-	-	Kn
6165.469	Ce	4	-			6157.834	Nd	25	-		6149.265	Fe II	-	-	4	-	Kn
6165.342	Fe	4	-			6157.804	Pr	3	-		6149.10	Sm II	60	-	-	-	Kn
6165.332	Nd	2	-			6157.734	Fe	15	-		6149.096	In II	-	-	[30]	-	Ps
6165.256	Pr	2	-			6157.714	Zr I	20	-		6149.01	Tl II	-	-	[5]	-	El
6165.2	P II	-	[15]		Dj	6157.55	Sm II	30	-	Kn	6148.991	Mo	3 h	-	-	-	
6165.132	Nd	2	-			6156.912	Nd	2	-		6148.84	Se	-	-	[30 h]	-	Bl
6165.11	A I	-	[8]		Ms	6156.90	Sm	30	-	Kn	6148.834	In II	-	-	[30]	-	Ps
6165.1	bh Yt	80	-		Me	6156.83	Sb	-	15	Kz	6148.8	bh Ti	2	-	-	-	L
6165.006	La	5	-			6156.78	O I	-	[300]	Ps	6148.7	bh La	20	-	-	-	Me
6164.95	Sm	3	-		Kn	6156.741	Ce	6	-		6148.693	Sc	2 h	20	-	-	
6164.772	U	5	-			6156.58	Ho	3	-	Ed	6148.62	Br I	-	-	[200]	-	Ks
6164.697	Ce	3	-			6156.578	Nd	8	-		6148.574	Nd	3	-	-	-	
6164.54	Se II	-	[30]		Bt	6156.38	Ho	3	-	Ed	6148.416	In II	-	-	[40]	-	Ps
6164.528	U	8	-			6156.29	Tb	4	-	Ed	6148.4	bh Yt	100	-	-	-	Me
6164.51	Sm	20 d	-		Kn	6156.25	Hf II	3	3 d	Me	6148.39	I II	-	-	[10]	-	Mu
6164.475	Th	3	2 h			6156.17	Tl II	-	[5]	El	6148.27	Sm	4	-	-	-	Kn
6164.44	Eu	8	-		Kn	6156.163	Nd	3	-		6148.255	In II	-	-	[20]	-	Ps
6164.422	Nd	4	-			6156.145	Ne I	-	[50]	Ps	6148.250	Pr	10	-	-	-	
6164.316	Cb	10	5			6156.00	Si I	10 h	-	Ks	6148.22	W	2	-	-	-	Me
6163.944	Sm	15	-			6155.99	O I	-	[150]	Ps	6148.134	Cb	20	5	-	-	
6163.935	Xe I	-	[80]		IMe	6155.73	Si I	2 h	-	Ks	6148.108	In II	-	-	[5]	-	Ps
6163.758	Ca I	10	7		IWg	6155.614	Zr I	6	-		6148.1	Te I	-	-	[2]	-	Rd
6163.661	Xe I	-	[90]		IMe	6155.503	Ce	3	-		6147.852	Fe I	10	-	-	-	
6163.65	Kr I	-	[7]		Me	6155.37	Eu	10 W	-	Kn	6147.849	Fe II	5	6	-	-	
6163.5939	Ne I	-	[1000]		S	6155.32	Si I	50 h	-	Ks	6147.70	Rh I	2	-	-	-	Me
6163.553	Fe I	2	-			6155.28	Xe II	-	[3 wh]	Hu	6147.31	Cu I	20	-	-	-	Az
6163.42	Ni I	100	-			6155.23	A I	-	[60]	Ms	6147.225	W	4	-	-	-	
6163.188	Ce	2	-			6155.22	Si I	20 h	-	Ks	6147.087	Ta	15 W	-	-	-	
						6155.16	Te	-	[15]	Bl	6146.94	Yb	2	15 h	-	-	Me

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis]	R			Arc	Spk., [Dis]	R			Arc	Spk., [Dis]	R
6146.93	Hg	-	[15]	Ps	6138.608	Mo	10	2	-	6129.754	In II	-	[20]	Ps
6146.817	Re I	50	-	-	6138.545	U	8	-	-	6129.720	U	10	-	-
6146.531	La I	20	8	-	6138.46	Se I	-	[60]	Rd	6129.696	In II	-	[60]	Ps
6146.520	Sm	10	-	-	6138.451	Sm	4	-	-	6129.684	Ta	2 h	-	-
6146.47	Te	-	[5]	Bl	6138.411	Yt I	7	4	-	6129.554	La II	40	25	-
6146.45	Xe II	-	[50]	Hu	6138.38	Ti I	15	-	Me	6129.474	In II	-	[5]	Ps
6146.421	Ce	12	-	-	6138.353	Gd	10	-	-	6129.335	Ba	6	-	Sz
6146.38	Co I	3 h	-	m	6138.30	Dy	2	-	Ks	6129.203	Nd	3	-	-
6146.25	So I	6	3	Me	6138.05	Sm	4	-	Kn	6129.106	Co I	20 w	-	-
6146.225	Ti I	400	-	-	6137.696	Fe I	100	-	S	6129.096	In II	-	[40]	Ps
6145.88	Sm	2	-	Kn	6137.383	Nd	3	-	-	6129.022	Mn II	-	[20]	Cz
6145.80	Re	50 w	-	Me	6137.30	Sb II	4 h	[2]	Lg	6128.992	In II	-	[12]	Ps
6145.43	A I	-	[100]	Ms	6137.234	Ce	4	-	-	6128.990	Ni I	10	-	-
6145.309	La I	10	5	-	6137.2	bh Zr	4	-	L	6128.725	Mn II	-	[40]	Cz
6145.271	Th	5	-	-	6137.188	In II	-	[50]	Ps	6128.721	In II	-	[40]	Ps
6145.22	Si I	15 h	-	Ks	6137.001	Fe I	10	-	-	6128.71	Sm II	20 d	-	Ab
6145.2	Sm	2	-	Kn	6136.81	Te	-	[70]	Bl	6128.71	A I	-	[8]	Ms
6145.08	Si I	10 h	-	Ks	6136.620	Fe I	100	-	S	6128.66	Cd I	15	-	Ps
6144.97	Xe I	-	[20 wh]	Me	6136.531	La I	2	-	-	6128.623	Cb	10	4	-
6144.93	Dy	2	-	Ks	6136.434	Gd	5	-	-	6128.619	Cs II	-	[20]	Sv
6144.74	Sm	3	-	Kn	6136.01	As	-	15	Ro	6128.451	Ne I	-	[100]	IMe
6144.65	Re	25	-	Sj	6135.85	Sm	20	-	-	6128.360	In II	-	[30]	Ps
6144.561	Ta	50	-	-	6135.835	Cr	10	-	Ss	6128.336	V I	2	2	-
6144.526	Os	8	-	-	6135.83	Ba II	-	[4]	Rs	6128.274	W	15	2	-
6144.512	Nd	2	-	-	6135.759	Cr	5	-	-	6128.256	Co I	5	-	m
6144.40	Fe	2	-	Bu	6135.522	Ce	3	-	-	6128.21	Yb	-	6	Me
6144.340	Rh	3	-	-	6135.377	V I	30	5	-	6128.168	Mo	12	2	-
6144.32	Te	-	[30]	Bl	6135.37	Mn	5	-	Me	6128.115	Bi II	-	30	Om
6144.28	Se	-	[15 h]	Bl	6135.10	Hf II	10	20	Me	6128.062	Rh I	15	-	-
6143.99	La	3	-	Ks	6135.07	V I	2	2	Me	6128.053	In II	-	[20]	Ps
6143.961	Sm	6	-	-	6135.04	Yt I	3	2	Me	6127.915	Fe I	8	-	-
6143.938	W	10	1	-	6135.04	Se II	-	[70]	Bl	6127.776	U	2	-	-
6143.743	Co I	5 h	-	Si	6134.82	Bi I	50	30	Wt	6127.760	In II	-	[5]	Ps
6143.70	Xe I	-	[4]	Me	6134.69	Sm	2	-	Kn	6127.73	Cu I	80	-	Az
6143.578	Sm	6	-	-	6134.589	Mo	4	2	-	6127.73	Sm	2	-	Kn
6143.40	Xe II	-	[10 h]	Hu	6134.550	Zr I	300	-	-	6127.513	In II	-	[40]	Ps
6143.362	Ce	3	-	-	6134.39	La I	70 R	-	Me	6127.464	I II	-	[125]	Ke
6143.229	In II	-	[80]	Ps	6134.31	Yb	2	5	Me	6127.44	Xe II	-	[15]	Hu
6143.200	Zr I	300	-	-	6134.06	Fe	2	-	Bu	6127.440	Zr I	500	-	-
6143.09	Sm	30	-	Kn	6133.964	Nd	5	-	-	6127.4	bh Yt	8	-	Me
6143.0623	Ne I	-	[1000]	S	6133.635	Dy	3	-	-	6127.38	A I	-	[15]	Ms
6142.981	La I	50	-	-	6133.610	Co	4	-	-	6127.225	Fe	2	-	-
6142.914	Ce	6	-	-	6133.60	Ho	10	-	Ed	6127.146	Dy	3	-	-
6142.70	Si I	6 h	-	Ks	6133.468	Nd	5	-	-	6127.08	Pt	2	-	Me
6142.53	Si I	5 h	-	Ks	6133.3	Te I	-	[2]	Rd	6127.057	La I	25	-	-
6142.508	Ne I	-	[100]	Ps	6133.225	Sm	4	-	-	6126.989	Sm	6	-	-
6142.506	Cb	10	5 h	-	6133.17	W	4	-	Me	6126.90	Er	4	-	Ed
6142.439	Nd	2	-	-	6133.07	Sm	2	-	Kn	6126.79	Ta	2	-	Ks
6142.385	Pr	2	-	-	6132.97	Re	2 h	-	Me	6126.475	Dy	3	-	-
6142.24	Te	-	[30]	Bl	6132.94	I	-	[50]	Bl	6126.36	Xe I	-	[15]	Me
6142.13	Xe I	-	[2 h]	Me	6132.742	In II	-	[50]	Ps	6126.305	Sm	10	-	-
6141.891	Nd	2	-	-	6132.70	Br	-	[6]	Ks	6126.215	Ti I	150	60	I
6141.80	U	2	-	Me	6132.613	U	10	-	-	6126.210	Mn II	-	[20]	Cz
6141.759	Fe I	10	-	-	6132.419	In II	-	[20]	Ps	6126.088	Ce	2	-	-
6141.722	Co	2	-	m	6132.410	Co I	10 h	-	-	6126.086	La II	20	25	-
6141.716	Ba	2000 wh	2000 wh	IKs	6132.4	'bh C	-	-	L	6125.855	Mn II	-	[50]	Cz
6141.66	Pt	3	-	Me	6132.23	Er	4	-	Ed	6125.84	Sm	15	-	Ab
6141.508	Pr	6	-	-	6132.14	Si I	4 h	-	Ks	6125.79	Ir	3	-	Me
6141.248	In II	-	[5]	Ps	6132.133	In II	-	[40]	Ps	6125.730	Th	5	-	-
6141.199	Ta	3	-	-	6132.113	Sm	3	-	-	6125.53	I I	-	[100]	Ob
6141.084	In II	-	[20]	Ps	6132.1	bh Yt	200	-	Me	6125.51	Se	-	[4]	Bl
6140.97	W	2	-	Me	6132.063	Yt	12 l	8 w	-	6125.455	Re	10	-	-
6140.71	Lu	10	-	Me	6132.004	Ce	4	-	-	6125.44	Si I	2 h	-	Ks
6140.66	Br	-	[15]	Bl	6132.0	bh Sc	3	-	Me	6125.32	Er	6	-	Ed
6140.659	In II	-	[30]	Ps	6131.917	Mn II	-	[10]	Cz	6125.23	Ru I	5	-	Me
6140.581	Sm	10	-	-	6131.86	Si I	5 h	-	Ks	6125.03	Si I	4 h	-	Ks
6140.457	Zr I	40	-	-	6131.790	Nd	5	-	-	6124.95	Sm	2	-	Kn
6140.39	Ba	10	-	Lr	6131.54	Si I	4 h	-	Ks	6124.88	Sm II	40	-	Kn
6140.368	U	2	-	-	6131.508	In II	-	[20]	Ps	6124.85	Si I	2 h	-	Ks
6140.357	In II	-	[20]	Ps	6131.275	In II	-	[40]	Ps	6124.84	Zr I	40	-	-
6140.33	Er	4	-	Ed	6131.229	Ta	5	-	-	6124.679	Eu	150	-	-
6140.3	bh Sc	10	-	Me	6131.142	Sm	10	-	-	6123.91	Xe I	-	[5]	Me
6140.28	Te	-	[15]	Bl	6131.005	Mn II	-	[10]	Cz	6123.758	La	5	-	-
6140.25	Cl I	-	[30]	Ks	6130.948	In II	-	[30]	Ps	6123.69	Mo	12 s	-	Ks
6140.11	Eu	3 W	-	Kn	6130.864	Mo	4	-	-	6123.673	Ce	15	-	-
6140.071	Ta	40 l	-	-	6130.794	Mn II	-	[30]	Cz	6123.60	Sm II	50 d	-	Kn
6140.026	In II	-	[12]	Ps	6130.628	Mo	12	2	-	6123.528	Mo	12 l	-	-
6139.682	In II	-	[5]	Ps	6130.608	Sm	10	-	-	6123.49	Se II	-	[60]	Bl
6139.351	Mo	3	-	-	6130.604	Nd	4	-	-	6123.38	A II	-	[6]	Rt
6139.33	Sm	6 h	-	Kn	6130.557	Pd I	10	-	-	6123.27	Hg	-	[15]	Ps
6139.15	Eu	6 W	-	Kn	6130.43	Sm	2	-	Kn	6123.03	Yb	-	4	Me
6139.031	Ce	3	-	-	6130.174	Ni I	15	-	-	6123.01	Ir	3	-	Me
6138.98	S	-	[50]	Bl	6130.133	Ce	5	-	-	6122.99	Yb	4	-	Me
6138.67	A II	-	[6]	Rt	6129.98	Sb II	10 h	150 h	Wt	6122.964	Nd	3	-	-
6138.630	Th	6	-	-	6129.87	Sm	15	-	Ab	6122.799	Mn II	-	[15]	Cz

6122.7—6096.8 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
6122.744	Sm	10	-	-	-	6114.198	Re I	30	-	-	-	6106.135	Nd	2	-	-	-
6122.653	Co I	125	-	-	-	6114.077	Gd	25	-	-	-	6106.044	Tb	6	-	-	-
6122.438	Mn II	-	-	[80]	Cz	6113.97	Dy	2	-	-	Ks	6105.97	Cu II	-	-	5	Sh
6122.3	Hg	-	-	[5]	Lf	6113.87	Ti II	-	-	[10]	El	6105.645	A I	-	-	[60]	IMe
6122.28	Au	2	-	-	Ql	6113.47	A I	-	-	[8]	Ms	6105.548	Pr	6 w	-	-	-
6122.244	Pr	5	-	-	-	6113.468	Nd	8	-	-	-	6105.519	Co	4	-	-	Sl
6122.224	Nd	20	-	-	-	6113.345	Pt	5	-	-	-	6105.518	Nd	5	-	-	-
6122.218	Co	40	-	-	-	6112.938	Sm	10	-	-	-	6105.470	Co I	10 h	-	-	-
6122.218	Ca I	100	-	100	I	6112.822	Th	15	3	-	-	6105.360	Sm	3	-	-	-
6122.12	Br I	-	-	[50 I]	Ks	6112.80	Tb	4	-	-	Ed	6105.296	Cb	10	1 h	-	-
6122.1	bh C	-	-	-	L	6112.70	Sb	4 h	-	-	Wt	6105.20	Er	6	-	-	Ed
6121.91	Zr I	60	-	-	-	6112.61	Kr II	-	-	[4 h]	Me	6104.82	Sm II	30 d	-	-	Kn
6121.81	Sm II	30 d	-	-	Kn	6112.103	U	2	-	-	-	6104.60	A I	-	-	[6]	Ms
6121.64	Dy	2	-	-	Ks	6111.99	Nd	2	-	-	-	6104.569	Th	12	2	-	-
6121.54	Se I, II	-	-	[40]	Rd	6111.951	Xe I	-	-	[40]	IMe	6104.392	Sm	6	-	-	-
6121.442	Th	6 h	-	-	-	6111.948	Ce	5	-	-	-	6104.27	Tb	6	-	-	-
6121.008	Ti I	35	-	-	-	6111.882	Eu	4 w	-	-	-	6104.2	Nd	3	-	-	Kn
6120.83	Zr I	12	-	-	-	6111.828	Sm	4	-	-	-	6104.106	Sm	3	-	-	-
6120.547	Th	15	3	-	-	6111.761	Xe I	-	-	[30]	IMe	6103.95	Sm	2	-	-	Kn
6120.38	Yb	-	20 h	-	Me	6111.723	La I	50	-	-	-	6103.88	Xe I	-	-	[3]	Me
6120.34	La I, II	2	1	-	Me	6111.680	W	12	1	-	-	6103.723	Sm	4	-	-	-
6120.26	Sm II	10 d	-	-	Ks	6111.661	Pt	8	-	-	-	6103.67	Dy	2	-	-	Ks
6120.219	K	-	-	[60]	Dm	6111.66	Sm	3	-	-	Kn	6103.642	Li I	200 R	300	-	Hz
6120.1	bh Zr	3	-	-	L	6111.646	V I	20	15	-	-	6103.56	A II	-	-	[8]	Rt
6119.98	Tb	4	-	-	Ed	6111.56	Zn II	8	[10]	-	Vs	6103.49	Cb	6	-	1 h	Me
6119.95	K	-	-	[10]	Sg	6111.52	Cd I	100	-	-	Ps	6103.374	Sm	30	-	-	-
6119.794	Ce	4	-	-	-	6111.50	Ti II	-	-	[20]	El	6103.370	Dy	2	-	-	-
6119.780	Ni I	2	-	-	-	6111.28	Yb	7	-	-	Me	6103.333	Fe	-	-	40	-
6119.67	A I	-	-	[2]	Ms	6111.06	Ni I	25	-	-	-	6103.185	Fe I	8 h	-	-	-
6119.629	Dy	2	-	-	-	6111.019	Eu	5	-	-	-	6102.751	Ce	3	-	-	-
6119.56	Kr	-	-	[10 w]	Me	6110.947	Cb	6	3	-	-	6102.739	Co	10	-	-	m
6119.55	Cu	25	-	-	Az	6110.91	Tb	4	-	-	Ed	6102.721	Ca I	80	50	-	I
6119.522	V I	30	20	-	-	6110.907	U	2	-	-	-	6102.721	Rh	100	-	-	-
6119.53	W	3	-	-	Me	6110.90	Cu II	-	5	-	Sh	6102.709	Cr	10	-	-	HI
6119.027	Mo	8	2	-	-	6110.787	Pb	15 hl	-	-	-	6102.589	Th	4	-	-	-
6118.892	Ce	3	-	-	-	6110.785	Ba I	200 Wh	60	-	IKs	6102.54	Zn II	6	-	[20]	Vs
6118.874	Rh I	3	-	-	-	6110.676	Mo	4 h	-	-	-	6102.26	S	-	-	[50]	Bl
6118.779	Eu	400 W	-	-	-	6110.672	Ir	35	-	-	-	6102.182	Fe I	15	-	20 h	-
6118.548	Ce	3	-	-	-	6110.66	Sm II	40 d	-	-	Kn	6101.96	Sm	30	-	-	Kn
6118.16	Hf	2	1	-	Me	6110.66	As II	-	150	-	Ro	6101.96	Se II	-	-	[200]	Bl
6118.10	Cb	6	2 h	-	Me	6110.30	As II	-	150	-	Ro	6101.9	bh Sc	30	-	-	Me
6118.10	Eu	4	-	-	Kn	6110.241	Mo	10	2	-	-	6101.868	Mo	40	4	-	-
6118.027	Ne I	-	-	[15]	Ps	6110.214	V I	2 h	3	-	Me	6101.787	U	6	-	-	-
6118.022	Pr	6 W	-	-	-	6110.19	Sm II	12	-	-	Kn	6101.747	Nd	10	-	-	-
6117.79	Sm	8	-	-	Kn	6110.19	Yb	-	4	-	Me	6101.72	Rn I	-	-	[4]	Rs
6117.708	Ce	2	-	-	-	6109.9	bh Sc	40	-	-	Me	6101.654	Au	5	-	-	Ql
6117.65	Tb	4	-	-	Ed	6109.688	Nd	8	-	-	-	6101.576	Ta	150	-	-	-
6117.62	Br II	-	-	[15]	Bl	6109.318	Fe	4	-	-	Bu	6101.43	Xe II	-	-	[200]	Hu
6117.6	Sm	3	-	-	Kn	6109.26	Sm	4	-	-	Kn	6101.422	Sm	4	-	-	-
6117.07	Tb	4	-	-	Ed	6109.078	Gd	10	-	-	-	6101.16	A I	-	-	[6]	Ms
6116.984	Co I	80	-	-	-	6109.058	Nd	3	-	-	-	6100.81	Se	-	-	[50]	Bl
6116.772	Ru I	25	-	-	-	6109.057	Pr	4	-	-	-	6100.779	Co I	4 h	-	-	-
6116.267	In II	-	-	[40]	Ps	6109.00	Sm	2	-	-	Kn	6100.379	La II	30	-	15	-
6116.19	Cd I	50	-	-	Ps	6108.995	In II	-	-	[60]	Ps	6100.36	Hg	-	-	[25]	Lf
6116.181	Ni I	150	-	-	-	6108.738	Ce	4	-	-	-	6100.04	Zr II	8	2	-	Ks
6116.146	Rh I	10	-	-	-	6108.655	In II	-	-	[50]	Ps	6100.033	Eu	12	-	-	-
6116.06	Se	-	-	[4]	Bl	6108.546	Pr	2	-	-	-	6100.01	Co II	-	-	5	Sh
6116.004	Er	6	-	-	-	6108.492	La I	70	-	-	-	6099.918	Sm I	15	-	-	-
6116.0	bh Sc	40	-	-	Me	6108.410	Nd	20	-	-	-	6099.910	U	3	-	-	-
6115.863	In II	-	-	[20]	Ps	6108.37	Xe I	-	-	[8]	Me	6099.9	bh Zr	3	-	-	L
6115.743	Sm	2	-	-	-	6108.34	Kr I	-	-	[3]	Me	6099.83	Rn I	-	-	[4]	Rs
6115.668	Dy	2	-	-	-	6108.334	In II	-	-	[40]	Ps	6099.792	Ce	10	-	-	-
6115.630	In II	-	-	[20]	Ps	6108.134	Eu	150	-	-	-	6099.62	Dy	2	-	-	Ks
6115.547	W	12	1	-	-	6108.123	Ni I	200	-	-	-	6099.385	Eu	600	-	-	-
6115.437	Ce	4	-	-	-	6107.927	Co I	25	-	-	-	6099.18	Cd I	300	-	-	Ps
6115.427	In II	-	-	[20]	Ps	6107.8	bh Yt	15	-	-	Me	6099.12	Sm	4	-	-	Kn
6115.38	Er	4	-	-	Ed	6107.709	Cb	20	3 h	-	-	6099.076	Th	12	2	-	-
6115.312	In II	-	-	[2]	Ps	6107.61	Kr	2	-	[5 w]	Me	6099.014	Nd	10	-	-	-
6115.284	Dy	2	-	-	-	6107.605	Dy	2	-	-	-	6098.807	A I	-	-	[60]	Ms
6115.23	Kr I	-	-	[3]	Me	6107.477	Eu	30	-	-	-	6098.67	Hf	5	2	-	Me
6115.08	Xe II	-	-	[50]	Hu	6107.45	Cu II	-	10	-	Sh	6098.668	Ti I	60	-	-	-
6115.04	I	-	-	[15]	Ev	6107.411	W	4	1	-	-	6098.62	C II	-	-	30	Fl
6114.92	Ho	3	-	-	Ed	6107.280	La I	25	-	-	-	6098.501	Fe	2	-	-	-
6114.92	A II	-	-	[100]	Rt	6107.26	Tb	4	-	-	Ed	6098.336	Ce	10	-	-	-
6114.86	Xe I	-	-	[10]	Me	6107.13	Sm	2	-	-	Kn	6098.30	Sm	5	-	-	Kn
6114.78	Zr II	10	2	-	Ks	6106.975	V I	15	2	-	-	6098.203	Nd	5	-	-	-
6114.73	Sm	10	-	-	-	6106.759	Pr	4	-	-	-	6097.929	Er	4	-	-	-
6114.7	bh Yt	20	-	-	Me	6106.70	Si	1 h	3	-	Ks	6097.787	Nd	3	-	-	-
6114.68	Ce	3	-	-	-	6106.55	Te	-	-	[15]	Bl	6097.601	Ce	3	-	-	-
6114.58	Sm II	25 h	-	-	Kn	6106.51	Ta	3	-	-	Ks	6097.60	Sb	15	-	-	Wt
6114.53	Ir	3	-	-	Me	6106.47	Zr II	8	2	-	Ks	6097.59	Xe II	-	-	[600]	Hu
6114.468	Ou II	-	-	20	Sh	6106.398	O	-	-	[30]	Fh	6097.47	Hf II	-	-	2	Me
6114.454	Nd	5	-	-	-	6106.23	Dy	2	-	-	Ks	6097.33	Cu II	-	-	10	Sh
6114.41	Cl I	-	-	[15]	Ks	6106.22	Yb	-	4	-	Me	6097.02	In	-	-	5	Sq
6114.396	Pr	10	1	-	-	6106.183	Gd	15	-	-	-	6096.8	bh Yt	30	-	-	Me

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
6096.790	Sm	15	-	-	6087.4	P II	-	[15]	Dj	6078.8	bh F	5	-	L
6096.683	Fe I	2	-	-	6087.338	U	10	-	-	6078.481	Fe I	8	6 h	-
6096.55	Sm	2	-	Kn	6087.337	Rh I	3	-	-	6077.91	I II	-	[2]	Mu
6096.346	Pr	3	-	-	6087.3	bh V	4	-	L	6077.856	Sm	4	-	-
6096.24	Sm	3	-	Kn	6087.259	Th	12	2	-	6077.806	Tb	6	-	-
6096.194	Mo	4	3	-	6086.964	Nd	4	-	-	6077.551	Ce	2	-	-
6096.1630	Ne I	-	[300]	S	6086.9	bh F	30	-	L	6077.48	Sn II	-	[12]	Mc
6096.12	Se II	-	[50]	Bl	6086.9	bh Zr	5	-	L	6077.366	Eu	100 W	-	-
6096.117	In II	-	[20]	Ps	6086.77	I	-	[150]	Bl	6077.358	V I	300 h	2	-
6095.960	In II	-	[80]	Ps	6086.648	Co I	80	-	-	6077.297	U	40	-	-
6095.846	In II	-	[50]	Ps	6086.627	Mo	5	3	-	6077.222	Nd	10	-	-
6095.782	In II	-	[5]	Ps	6086.617	Ce	6	-	-	6077.144	Ce	8	-	-
6095.74	Br	-	[5]	Ks	6086.55	V I	4 h	-	Me	6077.02	Dy	2 h	-	Ks
6095.725	In II	-	[5]	Ps	6086.290	Ni I	100	-	-	6076.866	Pt I	10	-	-
6095.53	Fe	3 h	-	Bu	6086.148	Pr	5	-	-	6076.82	As	-	15	Ro
6095.37	C II	-	15	Fl	6085.86	A I	-	[2]	Ms	6076.82	Tb	4	-	Ed
6095.24	Sm	4	-	Kn	6085.853	Pr	8	-	-	6076.738	Cs II	-	[2]	Sv
6094.76	W	3	-	Me	6085.485	La II	3	5	-	6076.598	Ce	5 d	-	-
6094.65	Cl II	-	[100]	Ks	6085.248	Th	6	-	-	6076.44	Er	10	-	Ed
6094.64	Tb	4	-	Ed	6085.226	Ti I	100	60	I	6076.03	Tb	4	-	Ed
6094.50	Kr II	-	[30 hl]	Me	6085.053	Dy	4	-	-	6075.917	Ce	4	-	-
6094.31	Kr I	-	[2]	Me	6085.03	Se	-	[15]	Bl	6075.83	N	-	[30]	Du
6094.082	Sm	5 l	-	-	6084.9	bh F	30	-	L	6075.8	Pb II	-	[200]	Ea
6094.0	Pb II	-	[2 d]	Ea	6084.888	La I	15	-	-	6075.721	Sm	8	-	-
6093.99	Tb	4	-	Ed	6084.80	I	-	[40]	Ke	6075.590	Eu	300	-	-
6093.866	V I	3 h	3	Me	6084.739	Ta	15 W	-	-	6075.568	Mo	3	2	-
6093.699	Sm	4	-	-	6084.622	Nd	8	-	-	6075.566	Ce	4 l	-	-
6093.637	Fe I	3	-	-	6084.604	Sm	2	-	-	6075.25	Yb	-	3	Me
6093.56	Xe II	-	[150]	Hu	6084.14	Lu	8 w	-	Me	6075.24	Kr I	-	[20]	Me
6093.38	Xe I	-	[3]	Me	6084.128	Sm	50	-	-	6075.192	Pr	5 w	-	-
6093.198	Ce	10	-	-	6083.873	Eu	500	-	-	6074.99	I II	-	[80]	Ke
6093.15	Hf II	-	2	Me	6083.82	W	2	-	Me	6074.963	Sm	5	-	-
6093.127	Co I	200	-	-	6083.558	Cb	10	2	-	6074.817	U	2	-	-
6093.037	Pr	3	-	-	6083.551	Ru	4	-	-	6074.61	Dy	2	-	Ks
6092.952	Ta	2	-	-	6083.441	Ba	10	3	Sz	6074.46	Sm	3	-	Ab
6092.909	Sm	4	-	-	6083.283	Co I	2 h	-	-	6074.432	Nd	3	-	-
6092.85	Sr	4	-	Ex	6083.280	Yb	-	2	-	6074.377	Ne I	-	[1000]	S
6092.814	Ti I	35	-	-	6083.21	Xe II	-	[5 h]	Hu	6074.268	Eu	10	-	-
6092.5	bh Sc	5	-	Me	6083.2	bh F	20	-	L	6074.045	La I, II	3	-	-
6092.29	W	2	-	Me	6083.12	Ir	3	-	Me	6073.967	Nd	20	-	-
6092.278	La I	4	-	-	6082.896	Nd	2	-	-	6073.932	Sb II	20 w	[8]	Lg
6092.12	S	-	[15]	Bl	6082.85	Kr I	-	[40]	Me	6073.774	Dy	2	-	-
6092.065	Ta	30	-	-	6082.714	Fe I	2	-	-	6073.52	Sn	8	-	Wt
6092.058	Nd	4	-	-	6082.664	Sm	15	-	-	6073.35	Te	-	[5]	Bl
6091.950	Sm	4	-	-	6082.46	I I	-	[1000]	Ev	6073.17	Al II	-	[15]	Sy
6091.81	Kr I	-	[6]	Me	6082.45	Te	-	[30]	Bl	6073.137	Sc	5	10	-
6091.602	Nd	3	-	-	6082.435	Co I	300 W	-	-	6073.114	Nd	2	-	-
6091.5	bh Zr	3	-	L	6082.40	Yb	-	10 h	Me	6073.104	Th	12	1	-
6091.454	Ta	3	-	-	6082.383	Gd	5	-	-	6072.96	Rh I	2	-	Me
6091.393	Sm	20	-	-	6082.032	Nd	2	-	-	6072.8	bh Yt	15	-	Me
6091.174	Ti I	125	25	I	6081.99	Sm	8	-	Ks	6072.738	Eu	2 W	-	-
6091.11	Tb	4	-	Ed	6081.79	Ho	8	-	Ed	6072.7	bh Sc	100	-	Me
6090.881	Dy	2	-	-	6081.6	bh F	20	-	L	6072.64	Hg	-	[10]	Wt
6090.823	Ta	50 w	-	-	6081.569	Nd	4	-	-	6072.25	Co II	1 h	5	Sh
6090.76	A I	-	[10]	Ms	6081.5	Pb II	-	[200]	Ea	6072.061	La I	2	-	-
6090.58	Ru I	5	-	Me	6081.481	W	25	1	-	6072.995	Ce	15	-	-
6090.372	Pr	4	-	-	6081.455	Mn	2	-	Sl	6071.701	Nd	20	-	-
6090.216	V I	60	15	-	6081.442	V I	100	10	-	6071.64	Sm	2	-	Kn
6090.149	Pr	3 d	2	-	6081.276	Ce	6	-	-	6070.751	Rb I	600	50	IRz
6089.79	Hg II	-	[25]	Lf	6081.275	Mo	8	2	-	6070.656	Co I	20	-	-
6089.659	Sm	5	-	-	6081.25	Tb	4	-	Ed	6070.536	Ta	2	-	-
6089.657	Ce	3	-	-	6081.23	A I	-	[4]	Ms	6070.074	Sm	40	-	-
6089.564	Fe	4	-	-	6081.14	Sb	4	6	Wt	6070.0	bh Yt	5	-	Me
6089.4	bh Yt	30	-	Me	6081.06	As	-	3	Ro	6070.0	bh Zr	6	-	-
6089.4	Pb II	-	[5]	Ea	6081.0	B II	-	5	En	6069.98	Ca	-	2	Ad
6089.295	Sm	3	-	-	6080.657	Gd	25	-	-	6069.698	Nd	4	-	-
6089.292	Dy	2	-	-	6080.607	Nd	3	-	-	6069.465	Ce	20	-	-
6089.195	U	2	-	-	6080.487	Sm	3	-	-	6068.948	I II	-	[50]	Ke
6089.919	Ce	8 w	-	-	6080.387	U	5	-	-	6068.94	Sn	12	25	Wt
6088.72	Yb	-	3	Me	6080.367	Ce	6 w	-	-	6068.663	La I	10	-	-
6088.619	Sm	10	-	-	6080.320	Cu II	-	30	Sh	6068.629	Ce	5	-	-
6088.26	Tb	6	-	-	6080.2	bh F	5	-	L	6068.53	Al II	-	[30]	Ps
6088.265	Dy	8	-	-	6080.15	Ru I	4	-	Me	6068.43	Al II	-	[60]	Ps
6088.22	Ho	3	-	Ed	6080.13	F I	-	[2]	Gl	6068.274	Sm	5	-	-
6088.076	Sm	5	-	-	6080.112	V	-	5	Me	6067.97	Ho	2	-	Ed
6088.037	Th	5	2	Fd	6080.07	Sm	3	-	Kn	6067.896	Dy	2	-	-
6088.01	Nd	2	-	-	6079.997	Eu	20 W	-	-	6067.830	Ir	25	-	-
6088.00	Kr I	-	[2]	Me	6079.797	Sb II	-	[60]	Lp	6067.782	Sm	40	-	-
6087.99	Yt I	3	2	Me	6079.71	Kr II	-	[20 hs]	Me	6067.65	W	4	1	-
6087.961	La	3	-	-	6079.70	Sn II	2 h	-	Mc	6067.52	Xe I	-	[2 h]	Me
6087.919	Nd	2	-	-	6079.64	Er	4	-	Ed	6067.50	Er	4	-	Ed
6087.704	Sm	3	-	-	6079.579	Mo	25	4	-	6067.401	Sm	5	-	-
6087.509	Nd	3	-	-	6079.55	Sb	20	100 h	Wt	6067.258	V I	15	2	-
6087.505	Pr	15	-	-	6079.3	bh Sc	100	-	Me	6067.236	Pr	3	-	-
6087.490	V I	8	1	-	6079.022	Fe I	2	-	-	6067.229	U	10	-	-

6067.1—6038.6 Å.

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
6067.140	La II	1	3	-	6056.993	Nd	2	-	-	6048.00	Hf II	3	5	Me
6066.893	W	3	-	-	6056.9	bh F	50	-	L	6048.00	Xe I	-	[6 h]	Me
6066.712	Ce	8 w	-	-	6056.89	Tb	4	-	Ed	6047.829	Mo	15	2	Wn
6066.651	Sm	2	-	-	6056.818	U	8	-	-	6047.665	Cr	6	-	HI
6066.58	Rn I	-	[2]	Rs	6056.650	Cb	10	5	-	6047.53	F I	-	[15]	En
6066.40	Al II	-	[2]	Sy	6056.59	Sm	5	-	Kn	6047.461	Sm	4	-	-
6066.031	Nd	20	-	-	6056.48	Yb	1	20 h	Me	6047.44	Te	-	[100]	Bl
6065.83	Se II	-	[80]	Bl	6056.128	Kr I	-	[60]	Me	6047.387	Ce	15	-	-
6065.743	Nd	2	-	-	6056.10	I	-	[30]	Ev	6047.247	Ta	150 l	-	-
6065.487	Fe I	50	30	S	6056.001	Fe I	10	10 h	-	6046.9	bh F	20	-	L
6065.142	Nd	2	-	-	6055.96	Se II	-	[1000]	Bl	6046.684	Pr	12	-	-
6065.09	W	7	1	-	6055.90	W	2	-	Me	6046.66	W	3	-	Me
6064.75	Rn I	-	[2]	Rs	6055.82	Te	-	[5 h]	Bl	6046.59	I	-	[15]	Bl
6064.75	A I	-	[6]	Ms	6055.5	bh F	30	-	L	6046.377	Ru	4	-	-
6064.7	bh Ti	2	-	L	6055.2	P II	-	[5]	Dj	6046.34	O I	-	[150]	Ps
6064.69	Cu I	3	-	Az	6055.2	bh Sc	10	-	Me	6046.158	Ne I	-	[50]	Ps
6064.631	Ti I	80	20	IKs	6055.133	Pr	100 w	-	-	6046.079	La	3	1	-
6064.552	Ne I	-	[50]	Ps	6055.133	I	-	[15]	Ev	6046.06	Kr	-	[10 wh]	Me
6064.4	bh F	200	-	L	6055.03	Lu	150 d	10	Me	6046.04	S I	-	[40]	Ms
6064.3	bh Sc	80	-	Me	6054.90	Sn	12	30	Wt	6046.01	Hg	-	[5]	Lr
6064.249	Gd	6	-	-	6054.84	Er	6	-	Ed	6045.882	Ce	2	-	-
6064.24	Te	-	[5]	Bl	6054.806	Mo	20	2	-	6045.852	Zr I	15	-	-
6064.13	Sb II	15	[2]	Lq	6054.56	Yb	10	-	Me	6045.65	Er	6	-	Ed
6063.827	Mo	6	10	-	6054.482	Nd	2	-	-	6045.499	Cb	20	10	-
6063.656	Sm	3	-	-	6054.475	V I	6	1	-	6045.430	Ce	6	-	-
6063.561	Dy	2	-	-	6054.248	Tb	4	-	-	6045.403	Cr	5	-	HI
6063.477	In II	-	[30]	Ps	6054.20	Te	-	[5]	Bl	6045.390	Ta	200 l	-	-
6063.382	V I	10	1	-	6054.17	Hf	5	-	Me	6045.372	Sm	40	20	-
6063.29	Xe	-	[3]	Hu	6054.16	I	-	[15]	Ev	6045.3	bh F	20	-	L
6063.118	Ba I	200 wh	60	IKs	6054.0	bh F	30	-	L	6044.992	Sm	60	-	-
6062.94	Ho	5	-	Ed	6053.879	Sm	5	-	-	6044.85	Kr	-	[2 h]	Me
6062.89	Fe I	2 h	-	Bu	6053.8	bh Yt	50	-	Me	6044.819	La I	3	-	-
6062.856	In II	-	[20]	Ps	6053.8	bh Zr	5	-	L	6044.676	Sm	2	-	-
6062.846	Zr I	30	-	-	6053.680	Ni I	5	-	-	6044.668	Eu	200	-	-
6062.73	Cu	3	-	Az	6053.642	Ta	150 l	-	-	6044.491	Dy	2	-	-
6062.314	U	10	-	-	6053.56	I	-	[30]	Ev	6044.425	Th	12	2	-
6062.311	In II	-	[20]	Ps	6053.411	Sb	-	[15]	Lq	6044.09	I	-	[30]	Bl
6062.3	bh F	150	-	L	6053.379	Th	5	-	-	6043.783	Nd	3	-	-
6061.92	Rn I	-	[20]	Rs	6053.11	Sm	3	-	Kn	6043.6	bh F	10	-	L
6061.83	Tb	6	-	Ed	6052.933	Eu	8 W	-	-	6043.386	Ce	30	-	-
6061.819	Sm	5	-	-	6052.901	Yb	8	30	Me	6043.38	Xe I	-	[10]	Me
6061.642	Eu	15 W	-	-	6052.84	Zr I	6	-	Ks	6043.331	W	10	1	-
6061.459	La	7	1	-	6052.8	bh F	20	-	-	6043.329	Sm	3	-	-
6061.26	Er	6	-	Ed	6052.79	Er	4	-	Ed	6043.230	A I	-	[100]	IMe
6061.20	Sm	10 d	-	Kn	6052.721	A I	-	[30]	IMe	6043.19	Hf	5	1	Me
6061.06	Al II	-	[2]	Sy	6052.63	S I	-	[125]	Ms	6043.109	Eu	2 W	-	-
6061.051	Nd	4	-	-	6052.3	Bi II	3	[10]	Cr	6043.05	P II	-	[150]	Sa
6060.75	Sn	2	-	-	6052.3	bh Cr	6	-	L	6042.874	Pr	5	-	-
6060.73	Sm II	20 d	-	Kn	6052.183	Eu	5	-	-	6042.86	Dy	2	-	Ed
6060.65	Se	-	[3]	Bl	6052.07	Sm	2 h	-	Kn	6042.814	Sm	15 d	-	-
6060.646	Ce	3	-	-	6051.99	Sb	-	6	Kz	6042.78	I	-	[30]	Ev
6060.60	Sm	6	-	Kn	6051.875	Nd	4	-	-	6042.545	Sm	10 d	-	-
6060.544	Ir	15	-	-	6051.804	Ce	5	-	-	6042.2	bh F	10	-	L
6060.4	bh F	100	-	L	6051.745	U	8	-	-	6042.089	Fe I	3	4	Ps
6060.31	Ho	4	-	Ed	6051.6	bh F	20	-	L	6042.013	Ne I	-	[15]	-
6060.3	bh Mg	6	-	L	6051.280	Eu	6	-	-	6041.96	Cb	12 h	2	Me
6059.871	Sm	5	-	-	6051.15	Xe II	-	[700]	Hu	6041.93	S I	-	[15]	Ms
6059.76	Tb	2	-	Ed	6051.176	Re	5	-	-	6041.90	Rn I	-	[10]	Rs
6059.731	U	3	-	-	6051.0	bh Ti	3	-	L	6041.732	Ru	4	-	-
6059.71	Pb	20 hl	-	Wt	6050.895	Mo	10	2	-	6041.715	Mn	3	-	Si
6059.7	bh C	-	-	L	6050.878	Pr	3	-	-	6041.66	Lu	20	1	Me
6059.373	A I	-	[100]	IMe	6050.8	bh F	50	-	L	6041.656	W	7	1	-
6059.317	Ce	2	-	-	6050.71	Ho	3	-	Ed	6041.57	I	-	[30]	Bl
6059.333	Ta	3	-	-	6050.492	U	8	-	-	6041.551	La	7	-	-
6059.3	bh Zr	2	-	L	6050.473	Nd	2	-	-	6041.44	Hf II	2	6	Me
6059.25	Yb	10	-	Me	6050.30	Sm	2 h	-	Kn	6041.4	Pb II	-	[35 d]	Ea
6058.963	Bi II	-	[40]	Om	6050.03	Dy	2	-	Ks	6041.378	Sm	40	-	-
6058.85	I	-	[15]	Bl	6050.029	Pr	4	-	-	6040.958	Nd	3	-	-
6058.6	bh F	80	-	L	6050.	K	-	[12]	MI	6040.9	bh F	10	-	L
6058.50	Rn I	-	[4]	Rs	6049.861	Nd	4	-	-	6040.815	Eu	6	-	-
6058.45	Sm	2	-	Kn	6049.81	Sm	10 wh	-	Kn	6040.80	Yb	3	10	Me
6058.307	Nd	2	-	-	6049.507	Gd	6	-	-	6040.7	Kr	-	[10 wh]	Me
6058.23	Ho	2	-	Ed	6049.503	Eu II	1000	-	-	6040.629	Ce	4	-	-
6058.225	Co I	3	-	-	6049.35	Kr I	-	[3]	Rs	6040.283	Yt I	2	-	Ed
6058.183	Dy	3	-	-	6049.257	Pr	5	-	-	6040.12	Hg II	-	[5]	Ps
6058.136	V I	60	-	-	6049.24	Zr I	18	-	-	6039.771	Mo	12	-	-
6058.014	Mo	12	2	-	6049.2	bh Yt	3	-	Me	6039.726	V I	100	10	-
6057.987	Ce	15	-	-	6049.095	Co I	50 h	-	-	6039.638	Re	3 w	-	-
6057.680	Sm	8	-	-	6049.055	Th	6	-	-	6039.624	U	10	-	-
6057.642	Nd	3	-	-	6048.8	bh F	30	-	L	6039.44	I	-	[15 h]	Bl
6057.6	bh Ti	2	-	L	6048.720	Cb	6	3 h	-	6039.38	Tb	6	-	Ed
6057.493	Ce	6	-	-	6048.72	I I	-	[70]	Ev	6039.1	bh Zr	4	-	L
6057.356	Eu	600	-	-	6048.53	Xe II	-	[5 h]	Hu	6038.97	Tb	8	-	Ed
6057.251	Sm	5	-	-	6048.43	Yb	15	-	Me	6038.682	Dy	2	-	-
6057.110	Mn	5	-	Si	6048.13	Er	6	-	Ed	6038.606	La I	50	-	-

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
6038.04	F I	[2]	GI	6026.260	Sm	2	-	6018.195	Fu	1000	-
6037.70	Sn	12	50	6026.18	Sc I	3	10 Me	6018.040	Fe	2	-
6037.692	Th	8	-	6026.097	Ir	20	-	6017.924	V I	4	1
6037.33	W	2	-	6026.035	Pt	20	-	6017.90	F I	-	[3] GI
6036.9	bh F	50	-	6026.0	bh F	20	-	6017.803	Pr	40	2
6036.645	Ir	10	-	6026.0	bh Zr	2	-	6017.708	Nd	2	-
6036.52	I	[15]	BI	6025.73	Ni I	2 h	-	6017.70	N	-	[10] Du
6036.45	Sm	2	-	6025.723	Pr	25	2	6017.578	U	3	-
6036.325	Re	3 h	-	6025.536	Nd	8	-	6017.39	Sm II	50 d	-
6036.2	bh Sc	200	-	6025.486	Mo	25	2	6017.387	U	4	-
6036.20	Xe II	-	[500]	6025.410	V	10	2	6017.27	Dy	3	-
6035.82	Kr I	-	[15]	6025.361	Zr I	6	-	6017.162	La I	8	-
6035.72	Yb	2	-	6025.18	Sm	4 d	-	6017.15	Hg	-	[10] Lf
6035.608	Nd	3	-	6025.14	A I	-	[10]	6017.1	bh Sc	40	-
6035.52	Ba	3	-	6025.093	La	3	-	6016.795	Sm	4	-
6035.6	Bi II	-	10 h	6025.059	Eu	2	-	6016.79	Hf	4	1 Me
6035.544	Sm	4	-	6024.99	Dy	2	-	6016.755	U	2	-
6035.487	Ce	4	-	6024.894	Tm	2	-	6016.655	Fe I	100	-
6034.937	Ta	2	-	6024.77	Xe II	-	[3 wh]	6016.642	Co	40	-
6034.92	Xe I	-	[2]	6024.45	Sm	3 d	-	6016.639	Mn	80 h	5 IKa
6034.9	Te I	-	[5]	6024.3	bh F	20	-	6016.571	Ce	10	-
6034.8	bh F	50	-	6024.30	Ho	2	-	6016.492	Pr	12	-
6034.546	La I	2	-	6024.261	Yt I	2	-	6016.358	Eu	3 W	-
6034.434	Ru	5	-	6024.248	Pt	10	-	6016.295	Nd	2	-
6034.239	Nd	20	-	6024.189	Ce	50	-	6016.122	V I	8	2
6034.204	Ce	4	-	6024.187	V	3	8	6016.027	Eu	8	-
6034.089	Cs I	35	[2]	6024.14	P II	-	[50]	6015.90	F	-	[2] GI
6033.9	P II	-	[30]	6024.13	I I	-	[300]	6015.895	Ta	40	-
6033.834	Sm	20	-	6024.07	Sm	10	-	6015.87	I	-	[50] BI
6033.674	Pt	2	-	6024.063	Fe I	20	20 h	6015.793	Os	8	-
6033.576	Ce	3	-	6023.83	Ir	5	-	6015.76	Er	4	-
6033.292	Nd	10	-	6023.68	Sm II	15	-	6015.580	Eu	150	-
6033.23	Sm II	25	-	6023.62	Hg	-	[5]	6015.418	Th	10	2
6032.9	bh F	30	-	6023.59	Dy	2	-	6015.40	N	-	[5] Du
6032.607	Zr I	25	-	6023.47	Ho	3	-	6015.380	Co I	2	-
6032.443	Sm	3	-	6023.392	Yt I	3	3	6015.329	Nd	2	-
6032.383	Eu	8	-	6023.25	Cu II	-	10	6014.95	Yb	3	-
6032.33	Cu I	8	-	6023.21	Sm	2	-	6014.837	Er	8	-
6032.14	Er	6	-	6023.157	Eu	200	-	6014.601	Sm	4	-
6032.124	A I	-	[60]	6022.81	As II	-	150	6014.5	bh Zr	2	-
6031.96	Hf II	1	3	6022.74	Au II	15	5	6014.49	Te	-	[100] BI
6031.840	Cb	10	5	6022.551	Er	8	-	6014.356	Mn	8	-
6031.80	Yb	10	-	6022.39	Kr II	-	[40]	6014.17	Se	-	[15] Bt
6031.68	Ti I	8	-	6022.06	Te	-	[30]	6014.068	U	3	-
6031.540	La	3	-	6021.97	Yb	2	15 h	6014.061	Ce	3	-
6031.38	Cd I	30	-	6021.85	I	-	[15]	6013.863	Sm	2	-
6031.266	Nd	25	-	6021.829	Fe I	300	-	6013.68	A I	-	[6] Ms
6031.247	Ce	5	-	6021.798	Mn	80 h	5	6013.66	Dy	2 h	-
6031.1	bh F	30	-	6021.794	Co	50	-	6013.582	Co I	30	-
6031.071	V	1	25	6021.761	Mg	5	-	6013.505	Fe	100	-
6030.979	Dy	3	-	6021.75	Sm II	15	-	6013.498	Mn	100 h	5
6030.662	Mo	300	125	6021.747	V I	8	1	6013.49	Te	-	[5 h] BI
6030.6	bh Yt	100	-	6021.702	Sc I	2	3	6013.446	Sm II	20	-
6030.5	bh Yt	6	-	6021.683	Ce	2	-	6013.418	Ce	25	-
6030.338	Sm	3	-	6021.577	Dy	2	-	6013.40	Cu II	-	8 Sh
6030.12	Se II	-	[30]	6021.541	W	25	-	6013.158	Ru	5	-
6029.9971	Ne I	-	[1000]	6021.43	Ho	5	-	6013.034	Mo	8	2
6029.89	Co	2 h	-	6021.373	Cb	4 h	10 h	6012.842	Sm	3	-
6029.885	W	3	1	6021.3	bh Zr	6	-	6012.814	W	30	3
6029.828	Sm	4	-	6021.267	Sm II	15	-	6012.732	Ti	10	-
6029.746	Cb	10	3	6021.26	Zn II	3	[15]	6012.560	Ta	4 h	-
6029.45	Se	-	[15]	6021.14	Ge II	-	25	6012.558	Eu	400	-
6029.39	I I	-	[5]	6021.131	Gd	10	-	6012.41	K II	-	[2] Bn
6029.3	bh F	20	-	6021.035	Th	6	-	6012.251	Ni	3	-
6029.10	Se I	-	[15]	6020.8	Te I	-	[7 w]	6012.210	Eu	300 W	-
6029.009	Eu	500	-	6020.720	Ta	300 r	-	6012.157	Kr I	-	[60] Ja
6028.982	V	1	8	6020.596	Ce	6	-	6011.98	Pb	25 hl	-
6028.695	Cb	4	10 h	6020.56	Yb	2	5	6011.551	Ce	4	-
6028.635	Zr II	6	2	6020.29	Se	-	[30]	6011.533	Nd	2	-
6028.635	Sm	4	-	6020.236	Nd	2	-	6011.419	Co I	2 h	-
6028.346	W	7	1	6020.179	Fe I	8	10 h	6011.343	Mo	12	2
6028.257	V	2	20	6020.047	Fe	2	-	6011.242	Sm II	60	20
6028.131	U	6	-	6019.903	Pr	8 w	-	6011.1	bh Yt	2	-
6027.91	Rh	2	-	6019.9	bh Yt	150	-	6011.08	Sn	3	-
6027.8	bh F	20	-	6019.51	Te	-	[30]	6010.93	Gd	10	-
6027.57	Hf II	10	20	6019.474	Ba I	150 Wh	50	6010.884	Nd	4	-
6027.524	Sm	5	-	6019.24	Tb	4	-	6010.875	U	4	-
6027.268	Mo	20	2	6019.153	U	3	-	6010.814	Dy	5	-
6027.235	V	-	7	6018.977	Th	8	-	6010.794	Sm	3	-
6027.159	Sm	15	-	6018.970	Ta	15	-	6010.65	Tb	6	-
6027.057	Fe	6	12	6018.933	Nd	2	-	6010.449	Ce	5	-
6026.83	Sm	2	-	6018.794	Ce	5	-	6010.33	Ce I	50	[10] Me
6026.805	V	-	5	6018.62	Ti I	8	-	6010.259	Sm	3	-
6026.76	Xe I	-	[4]	6018.50	Dy	2	-	6010.158	Th	3	-
6026.50	Br	-	[15]	6018.423	Ti	15	-	6009.99	Kr II	-	[10 h] Me

6009.8—5984.8 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
6009.895	Sm	5	-	-	6002.316	Nd	2	-	-	5993.27	Cu II	-	8	Sh
6009.893	Ta	40	-	-	6002.306	V I	10	2	-	5993.12	Te	-	[75]	Bl
6009.78	Xe I	-	[8]	Me	6002.3	bh Sc	3	-	Me	5993.04	Ho	8	-	Ed
6009.701	W	4	-	-	6002.19	Kr I	-	[3]	Me	5992.96	Hf	2	1	Me
6009.7	Pb II	-	[40]	Ea	6002.04	Ho	8	-	Ed	5992.860	Eu	1000	-	-
6009.304	Nd	5	-	-	6001.947	Sm	8	-	-	5992.657	Ce	10	-	-
6009.30	Dy	2	-	Ka	6001.892	Ce	10	-	-	5992.6	bh C	100	-	L
6009.2	bh Yt	8	-	Me	6001.884	Pb	40 hl	3 h	Hx	5992.475	W	5	-	-
6009.041	W	6	1	-	6001.88	Al II	-	[50]	Ps	5992.45	O	-	[30]	Ps
6008.940	Dy	3	-	-	6001.76	Al II	-	[60]	Ps	5992.360	La I	3	-	-
6008.92	Xe II	-	[100]	Hu	6001.678	Sm	50	-	-	5992.34	Ga	-	10	Kl
6008.915	Sm	2	-	-	6001.448	Nd	2	-	-	5992.22	Kr II	-	[200]	Me
6008.871	U	2	-	-	6001.34	Te	-	[15]	Bl	5992.17	Tb	10	-	Ed
6008.755	Er	4	-	-	6001.198	Fe	3 h	-	-	5992.1	bh Yt	10	-	Me
6008.715	Gd	15	-	-	6001.18	Al II	-	[5]	Sy	5991.98	La II	-	4 h	Me
6008.62	Te	-	[30]	Bl	6001.111	Sm	3	-	-	5991.878	Co I	900 R	-	-
6008.576	Fe I	18	10	-	6001.051	Zr I	8	-	-	5991.86	Xe II	-	[10 h]	Hu
6008.5	bh Zr	4	-	L	6001.05	Yb	2	1	Me	5991.850	O	-	[15]	Fh
6008.48	N I	-	[800]	Du	6000.951	Ne I	-	[100]	Ps	5991.849	Gd	3	-	-
6008.10	Kr II	-	[3 hs]	Me	6000.86	Dy	2	-	Ks	5991.741	Sm II	10 w	-	-
6007.97	Te	-	[15]	Bl	6000.769	Th	2	-	Fd	5991.675	Ne I	-	[75]	Ps
6007.966	Fe I	10 h	10 h	-	6000.668	Co I	80	-	-	5991.624	Ce	2	-	-
6007.954	Er	-	-	-	6000.31	Se II	-	[15]	Bt	5991.503	Yb	50	150	-
6007.94	Sm	10 d	-	-	6000.25	Cb	-	2 h	Me	5991.383	Fe II	2 h	2 h	-
6007.909	Xe I	-	[15]	Ime	6000.196	U	5	-	-	5991.348	Mo	10	-	-
6007.69	Yt I	3	3	Me	6000.184	Ce	6	-	-	5991.186	Rh I	10	-	-
6007.671	Co I	50 h	-	-	6000.104	Cu II	-	40	Sh	5991.005	Th	8	-	-
6007.669	Nd	25	-	-	6000.043	Nd	2	-	-	5990.92	Se II	-	[35]	Bl
6007.51	I	-	[50]	Bl	5999.950	Fe	10 h	-	Bu	5990.86	I	-	[8]	Ev
6007.5	Pb II	-	[10]	Ea	5999.85	Ba II	-	[15]	Rs	5990.851	Ce	3	-	-
6007.42	Yb	4	80 h	Me	5999.83	Al II	-	[10]	Ps	5990.689	Nd	3	-	-
6007.381	La I	70	-	-	5999.714	Ir	5	-	-	5990.244	Nd	5	-	-
6007.358	Ce	5	-	-	5999.70	Al II	-	[10]	Ps	5990.119	W	4	-	-
6007.258	Ni I	20	-	-	5999.680	Ti I	70	-	-	5990.006	Mo	10	-	-
6007.095	Sm	2	-	-	5999.47	N I	-	[90]	Du	5990.0	Re	3 h	-	-
6007.068	Th	10	-	-	5999.427	U	8	-	-	5989.88	Er	8	-	Ed
6006.81	Er	10	-	m	5999.4	bh Zr	5	-	L	5989.692	Sm	8	-	-
6006.808	Ce	15	-	-	5999.069	Gd	8	-	-	5989.600	W	7	-	-
6006.638	Fe	2	-	-	5999.040	Ti I	15	10	-	5989.474	Mo	12	-	-
6006.5	bh Ti	3	-	L	5999.00	A I	-	[20]	Ms	5989.380	Ce	10	-	-
6006.42	Al II	-	[30]	Ps	5998.967	Ti	8	-	Bh	5989.374	Sm	10 d	-	-
6006.399	Nd	2	-	-	5998.844	Sm	2	-	-	5989.341	Nd	15	-	-
6006.39	Hf II	2	2	Me	5998.493	Sm	3	1	-	5989.332	Yb	15	-	-
6006.355	Co I	50 h	-	-	5998.270	W	2	-	-	5989.18	Xe I	-	[20 h]	Me
6006.347	Pr	12	1	-	5998.115	Xe I	-	[30]	Ime	5989.035	Th	20	5	-
6006.211	Ce	6	-	-	5998.085	Sm	2	-	-	5988.792	Ce	5	-	-
6006.15	Ca	8	-	-	5998.035	Th I	1	5	-	5988.672	Ru I	12	-	-
6006.105	Sb	4 h	[20]	Lg	5997.978	U	8	-	-	5988.575	Dy	8	-	-
6005.855	Ce	20	-	-	5997.926	Cb	50	5	-	5988.560	Ti I	18	-	-
6005.74	A I	-	[4]	Ms	5997.805	Fe I	4	-	-	5988.44	Xe	-	[2]	Hu
6005.68	Eu	60	-	Kn	5997.610	Ni I	5	-	-	5988.42	Sc I	10	-	Me
6005.45	Pt	2	-	Me	5997.329	U	25	-	-	5988.30	Cu II	-	25	Sh
6005.33	Ho	3	-	Ed	5997.319	Sm II	50	-	-	5988.239	Fe	3	-	-
6005.21	Sb II	-	[200]	Lg	5997.234	Ta	200 W	-	-	5988.173	Mo	30	-	-
6005.156	Sm	3	-	-	5997.13	Lu	50	5	Me	5988.142	Nd	2	-	-
6005.146	Fe	2 h	-	-	5997.091	Ba I	150 wh	50	IKs	5988.11	A I	-	[2]	Ms
6005.09	I	-	[15]	Ev	5997.048	Ce	2	-	-	5988.094	Pt	2	-	-
6005.017	Co I	8	-	-	5996.944	Sm	3	-	-	5988.008	Gd	4	-	-
6005.00	Sb	8 h	12 h	Wt	5996.902	Co I	2	-	-	5987.91	Yb	2	20 h	Me
6005.0	Te I	-	[5 w]	Rd	5996.76	F	-	[2]	Gl	5987.907	Ne I	-	[150]	Ime
6004.9	bh C	-	-	L	5996.74	Ni I	10	-	-	5987.61	Se	-	[8]	Bt
6004.828	U	2	-	-	5996.465	Nd	15	-	-	5987.6	bh Yt	300	-	Me
6004.65	Yt	7	-	Me	5996.20	Tb	10	-	Ed	5987.440	W	4	-	-
6004.6	Sb II	-	200 h	Dv	5996.16	S	-	[25]	Bl	5987.39	Sm II	3	-	Kn
6004.571	Gd	35	8	-	5996.054	Pr	8 w	-	-	5987.385	Ce	4	-	-
6004.52	Lu	400	40	Me	5996.042	Sm	4	-	-	5987.289	A I	-	[40]	Ms
6004.41	Eu	300	-	Kn	5996.007	Ti I	20	-	-	5987.148	Pr	4	-	-
6004.40	Te	-	[50]	Bl	5995.998	Os	50	-	-	5987.097	Gd	8	-	-
6004.332	Nd	2	-	-	5995.756	Re	20 w	-	-	5987.055	Fe I	25 h	12 h	-
6004.197	Sm	2	-	-	5995.685	Ti I	10	-	-	5986.934	W	3	-	-
6003.978	Nd	2	-	-	5995.59	Cu II	-	10	Sh	5986.814	Eu	2 h	-	-
6003.664	Ce	3	-	-	5995.367	Zr I	3	-	-	5986.442	U	2	-	-
6003.65	Yb	5	-	Me	5995.308	Sm	2	-	-	5986.27	Tb	10	-	Ed
6003.6	bh Yt	200	-	Me	5995.260	Ce	3	-	-	5986.246	Ce	3	-	-
6003.567	Sm	8 d	-	-	5995.198	O	-	[40]	Fh	5986.23	Xe I	-	[4]	Me
6003.244	Dy	2	-	-	5995.099	Sm	8	-	-	5986.140	Pr	25 w	-	-
6003.08	Eu	20 w	-	Kn	5994.756	Nd	15 h	-	-	5986.122	U	25	-	-
6003.034	Fe I	30	15	-	5994.66	A I	-	[2]	Ms	5986.081	Cb	5	5	-
6002.853	Sm	3	-	-	5994.651	Sm II	60	-	-	5985.64	Te	-	[75]	Bl
6002.640	Ti I	4	-	-	5994.129	Th	10	-	-	5985.54	Ba	3	-	Lr
6002.627	V I	20	2	-	5994.035	Nd	3	-	-	5985.488	Sm	2	-	-
6002.528	Nd	2	-	-	5993.94	Te	-	[75]	Bl	5985.03	I	-	[15]	Ev
6002.457	Co I	2	-	-	5993.852	Sm	20	-	-	5984.863	Dy	3	-	-
6002.450	Pr	6	-	-	5993.8503	Kr I	-	[60]	S	5984.86	Se	-	[8]	Bl
6002.342	Sc	3	5	-	5993.653	Ru I	15	-	-	5984.825	Zr I	2	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5984.804	Fe I	50	20 h	-	-	5975.830	Ce	15	-	-	-	5966.76	Er	8	-	-	Ed
5984.642	V	-	18	-	-	5975.754	La I	8	-	-	-	5966.710	Nd	2	-	-	-
5984.586	Ti I	15	-	-	-	5975.5340	Ne I	-	[600]	S	-	5966.483	Dy	3	-	-	-
5984.393	Cs	-	[15]	Sv	-	5975.503	Nd	2	-	-	-	5966.379	Nd	2	-	-	-
5984.36	I	-	[15]	Ev	-	5975.50	Er	8	-	-	Ed	5966.344	Ce	8	-	-	-
5984.298	Sm	12	-	-	-	5975.358	Fe	10	10	-	-	5966.171	Ne I	-	[35]	-	Ps
5984.265	Co I	2	-	-	-	5975.340	V I	18	3	-	-	5966.066	Eu	1000	-	-	-
5984.231	Zr I	15	-	-	-	5975.233	Ce	3	-	-	-	5965.859	W	25	-	-	-
5984.15	Lu	20	40	Kn	-	5975.065	Th	10	-	-	-	5965.840	Ti I	150	200	-	-
5984.085	Co	10	-	-	-	5974.82	Kr II	-	[2]	Me	-	5965.708	Sm II	125	-	-	-
5984.00	Lu	20	-	Me	-	5974.788	U	2	-	-	-	5965.661	Co I	2 h	-	-	-
5983.874	Sm	4	-	-	-	5974.72	Hf	2	-	Me	-	5965.574	Mo	15	-	-	-
5983.855	Eu	20	-	-	-	5974.70	Ta	-	[250]	Bl	-	5965.474	Ne I	-	[500]	-	IMe
5983.836	W	7	-	-	-	5974.628	Ne I	-	[500]	IMe	-	5965.02	Co I	2 h	-	-	Ms
5983.80	Lu	20	40	Kn	-	5974.563	Nd	4	-	-	-	5964.787	Ba	7	-	-	Sz
5983.705	Fe I	35	12 h	-	-	5974.503	Dy	8	-	-	-	5964.645	Ce	5	-	-	-
5983.641	Sm	4 d	-	-	-	5974.28	Hf	10	2	Me	-	5964.478	Dy	4	-	-	-
5983.599	Rh I	200	2	-	-	5974.257	Mo	20	-	-	-	5964.46	A	-	[2]	-	Ms
5983.59	Lu	30	60	Kn	-	5974.248	Nd	5	-	-	-	5964.457	W	2	1	-	-
5983.3	bh Zr	8	-	L	-	5974.167	Ru	6	-	-	-	5964.058	U	2	-	-	-
5983.267	Co I	2	-	-	-	5974.152	Xe I	-	[40]	IMe	-	5963.926	Sm	3	-	-	-
5983.26	Eu	20	-	Kn	-	5973.679	Ru	4	-	-	-	5963.765	Eu	60	-	-	-
5983.216	Cb	20	20	-	-	5973.672	Eu	2	-	-	-	5963.359	Ce	3	-	-	-
5983.15	Re	3 h	-	-	-	5973.669	Th	10	1	-	-	5963.258	Nd	3	-	-	-
5982.927	Mo	20	-	-	-	5973.527	La II	15	120	-	-	5963.211	Sm II	40	-	-	-
5982.90	Ho	200	-	Ed	-	5973.52	Ho	125	-	Ed	-	5963.05	Sm	3	-	-	Kn
5982.717	U	2	-	-	-	5973.379	Ru I	12	-	-	-	5963.022	Pr	9	-	-	-
5982.662	Re	3 h	-	-	-	5973.01	Bi II	-	40	Om	-	5962.72	Au	35	3	-	Wt
5982.52	Ti I	10	-	Rl	-	5973.0	bh Yt	600	-	Me	-	5962.67	Se II	-	[5]	-	Bl
5982.428	Gd	8	-	-	-	5972.78	Ba	100	-	Ex	-	5962.67	Ho	12	-	-	Ed
5982.401	Ne I	-	[8]	Ps	-	5972.776	Eu	300	-	-	-	5962.604	La I	5	-	-	-
5982.357	La I	10	-	-	-	5972.64	Te	-	[50]	Bl	-	5962.445	Ba	5	-	-	Sz
5982.345	Sm	6	-	-	-	5972.566	Sm	9	-	-	-	5962.39	Nd	2	-	-	Ks
5982.014	Sm	5	-	-	-	5972.519	W	25	-	-	-	5962.208	Pr	6	-	-	-
5981.994	Co I	3 h	-	-	-	5972.499	Nd	2	-	-	-	5962.01	Se I	-	[100]	-	Rd
5981.90	A I	-	[5]	Ms	-	5972.34	As	-	6	Ro	-	5961.973	Th	8	-	-	Ps
5981.86	Yt I	3	-	Me	-	5972.103	Sm	2 d	-	-	-	5961.626	Ne I	-	[70]	-	Lf
5981.838	Ce	4	-	-	-	5972.096	Ce	6	-	-	-	5961.49	Hg	-	[12]	-	Me
5981.683	Re	2 h	-	-	-	5971.94	Al II	-	[35]	Db	-	5961.49	Sc I	6	-	-	Me
5981.43	Ho	8	-	Ed	-	5971.85	I I	-	[30]	Db	-	5961.43	La II	-	3	-	Me
5981.42	Sb II	-	[2]	Lg	-	5971.701	Ba I	150	50	IKs	-	5961.39	Lu	3	-	-	Me
5981.42	Hg	-	[4]	Lf	-	5971.687	Eu	40	-	-	-	5961.32	Se I	-	[30]	-	Rd
5981.42	I I	-	[15]	Ev	-	5971.66	Tb	10	-	Ed	-	5961.156	Nd	4	-	-	Bh
5981.25	Ba II	-	[40]	Rs	-	5971.59	A I	-	[5]	Ms	-	5961.132	Ti	2	-	-	Ed
5981.209	Pr	12	1	-	-	5971.525	U	50	-	-	-	5961.00	Tb	25	-	-	-
5981.195	Ce	3	-	-	-	5971.268	Tm	10	5	-	-	5960.883	Ce	2	-	-	-
5980.98	Sb II	-	15	Kz	-	5971.13	Xe II	-	[150]	Hu	-	5960.823	W	8	-	-	-
5980.96	I	-	[15]	Ev	-	5971.09	La II	1	8	Me	-	5960.690	Ir I	3	-	-	-
5980.779	V I	50	-	-	-	5970.93	Eu	5	-	Kn	-	5960.586	La I	10	-	-	-
5980.549	Sm	3	-	-	-	5970.903	Er	8	-	-	-	5960.376	Th	3	-	-	-
5980.481	Eu	10	-	-	-	5970.803	Sm	15	-	-	-	5960.185	Ce	4	-	-	-
5980.369	Sm	2	-	-	-	5970.69	Rh I	2	-	Me	-	5960.129	Ta	7	-	-	-
5979.975	Eu	4	-	-	-	5970.5	bh Sc	5	-	Mo	-	5960.103	Sm	20	-	-	-
5979.951	Nd	3	-	-	-	5970.309	Gd	8	-	-	-	5959.698	Ce	6	-	-	-
5979.758	Sm	2 h	-	-	-	5970.30	Sn	10	30	Wt	-	5959.63	Se	-	[5]	-	Bl
5979.63	Br	-	[5]	Bl	-	5970.10	Sr I	10	-	Fl	-	5959.49	Sm	3	-	-	Kn
5979.397	Ce	5 w	-	-	-	5969.80	Rn I	-	[20]	Rs	-	5959.31	Yb	3	-	-	Me
5979.391	Sm	15	-	-	-	5969.796	Re	20 w	-	-	-	5959.308	Pr	3 w	-	-	-
5979.20	Cu II	-	3	Sh	-	5969.64	K II	-	[5]	Bn	-	5959.0	bh Sc	6	-	-	Me
5979.20	Si	-	5	Sy	-	5969.6	bh Yt	4	-	Me	-	5958.942	Er	20	-	-	-
5979.106	Pt I	3	-	-	-	5969.57	Kr	-	[2 whl]	Me	-	5958.7	bh C	-	-	-	L
5979.04	Br	-	[5]	Bl	-	5969.554	Fe I	5	-	-	-	5958.70	Yb	10	-	-	Me
5978.906	V I	100	-	-	-	5969.485	Sm	5	-	-	-	5958.53	O I	-	[100 h]	-	Ps
5978.886	W	7	-	-	-	5969.38	Hf II	4	5	Me	-	5958.223	Sm	2	-	-	-
5978.882	Pr	4	-	-	-	5969.19	Sc I	4	-	Me	-	5958.03	Xe II	-	[50]	-	Hu
5978.66	Hf	6	1	Me	-	5968.96	Au	8	-	-	-	5957.90	La II	-	4	-	Me
5978.557	Ti I	125	150	-	-	5968.818	Sm II	40	-	-	-	5957.80	Si	-	5	-	Sy
5978.496	Ba	6	3	Sz	-	5968.789	Nd	2	-	-	-	5957.704	Cb	8 h	3 h	-	-
5978.229	Xe I	-	[2]	Me	-	5968.70	Er	12	-	Ed	-	5957.67	Ra	-	[35]	-	Rs
5978.043	Sm	5	-	-	-	5968.5	bh Sc	10	-	Me	-	5957.589	Nd	3	-	-	-
5977.7	bh Zr	20	-	L	-	5968.481	Mo	4	-	-	-	5957.521	Sm II	40	-	-	-
5977.65	Kr I	-	[4]	Me	-	5968.439	Eu	10	-	-	-	5957.17	Ra	-	[8]	-	Rs
5977.415	Nd	3	-	-	-	5968.41	I	-	[15]	Ev	-	5956.984	Au I	35	8	-	Qi
5977.403	Eu	2 h	-	-	-	5968.31	A I	-	[2]	Ms	-	5956.98	I	-	[15]	-	Ev
5977.4	Rn	-	[20]	Wa	-	5968.301	Pr	4	-	-	-	5956.882	U	5	-	-	-
5977.249	Gd	8	-	-	-	5968.282	Nd	3	-	-	-	5956.835	Ce	3	-	-	-
5976.957	Pr	3	-	-	-	5968.25	Sc	7	-	Me	-	5956.786	Sm	4	-	-	-
5976.799	Ti	2	-	-	-	5967.837	Pr	15	1	-	-	5956.708	Fe I	12	-	-	-
5976.682	W	5	-	-	-	5967.791	V	-	5	Me	-	5956.617	Pr	12	1	-	-
5976.481	Sm	3	-	-	-	5967.640	Re	5	-	-	-	5956.457	Gd	8	-	-	-
5976.46	Xe II	-	[800]	Hu	-	5967.54	Kr II	-	[15 whs]	Me	-	5956.4	bh Yt	80	-	-	Me
5976.354	Nd	3	-	-	-	5967.323	Tb	40	-	-	-	5956.30	Hp	-	[4]	-	Lf
5976.344	U	50	-	-	-	5967.159	Eu	2000 s	-	-	-	5956.184	W	7	-	-	-
5976.22	Se II	-	[8]	Bt	-	5967.132	Sm	5	-	-	-	5956.07	Er	8	-	-	Ed
5975.985	Ce	15	-	-	-	5966.79	As	-	4	Ro	-	5955.98	Ho	100	-	-	Ed

5955.8—5927.0 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5955.869	Nd	15	-	-	-	5945.811	Dy	5	-	-	-	5935.288	La I	20	-	-	-
5955.832	Sm	25	-	-	-	5945.717	Yt I	4	-	-	-	5935.202	Zr I	20	-	-	-
5955.687	Sm	3	-	-	-	5945.53	Xe II	-	[200]	-	-	5935.109	Sm	2	-	-	-
5955.49	Er	8	-	-	Ed	5945.50	Br	-	[10]	-	-	5935.06	Yb	3	40	-	Me
5955.354	Zr I	20	-	-	-	5945.44	Kr I	-	[5]	-	-	5935.03	Kr II	-	[8 h]	-	Me
5955.14	Kr I	-	-	-	Me	5944.884	Ce	8	-	-	-	5934.747	Nd	10	-	-	-
5954.96	Te	-	-	[25]	Bl	5944.8342	Ne I	-	[500]	-	-	5934.72	Sn	3 h	-	-	Wt
5954.6	bh Ti	2	-	-	L	5944.735	Sm	4 d	-	-	-	5934.680	Fe I	15	-	12 h	-
5954.49	I	-	-	[8]	Ev	5944.7	Rn	-	[10]	-	-	5934.55	Xe	-	-	[2 wh]	Hu
5954.319	Re	3	-	-	-	5944.65	Ti I	10	-	-	-	5934.486	W	5	-	-	-
5954.269	Eu	30	-	-	-	5944.024	Ta	80	-	-	-	5934.463	U	2	-	-	-
5954.00	Br I	-	-	[20]	Ks	5943.98	Hg	-	[4]	-	-	5934.458	Ne I	-	[75]	-	Ps
5953.971	W	5	-	-	-	5943.89	A I	-	[2]	-	-	5934.443	Ce	5	-	-	-
5953.836	Ru	4	-	-	-	5943.519	Ce	3	-	-	-	5934.320	Er	8	-	-	-
5953.828	Eu	40	-	-	-	5943.242	Re	100	-	-	-	5934.32	Tb	10	-	-	Ed
5953.740	Tb	10	-	-	-	5943.216	Nd	15	1	-	-	5934.172	Xe I	-	[100]	-	IMe
5953.496	Eu	30	-	-	-	5942.999	Sm	5	-	-	-	5934.163	Cb	5	-	-	-
5953.171	Ti I	150	250	-	-	5942.798	Th	8	-	-	-	5933.958	Ne	-	[8]	-	Ps
5953.080	Nd	2	-	-	-	5942.729	Eu	30	-	-	-	5933.852	U	-	-	-	-
5952.872	Ce	3	-	-	-	5942.668	A I	-	[40]	-	-	5933.71	Ho	200	-	-	Ed
5952.740	Fe I	8 h	-	-	-	5942.660	Ce	10	-	-	-	5933.7	Au I	5	-	-	MI
5952.43	Rh I	3	-	-	-	5942.292	Sm	10	-	-	-	5933.69	Hf	6	1	-	Me
5952.39	N II	-	-	[30]	Fl	5942.13	Kr I	-	[2]	-	-	5933.581	Ce	3	-	-	-
5952.37	Sm II	5	-	-	Ks	5942.119	Fe	2	-	-	-	5933.495	Er	8	-	-	-
5952.362	Fe	3	-	-	-	5941.895	Ce	3	-	-	-	5933.22	Te	-	[15]	-	Bl
5952.20	Sc	5	-	-	Me	5941.82	Kr	-	[4 whs]	-	-	5933.2	bh Yt	2	-	-	Me
5952.053	U	3	-	-	-	5941.758	Ti I	100	-	-	-	5933.085	Fe	10	-	-	Ed
5951.9	bh Zr	5	-	-	L	5941.67	N II	-	[200]	-	-	5932.95	Tb	10	-	-	-
5951.784	Tb	10	-	-	-	5941.648	Pr	5	-	-	-	5932.887	Sm II	50	-	-	-
5951.773	Pr	4	-	-	-	5941.537	Ce	3	-	-	-	5932.60	Rn I	-	[25]	-	Rs
5951.779	Ta	15 w	-	-	-	5941.46	Rh I	4	-	-	-	5932.444	U	4	-	-	-
5951.580	Gd	3 h	-	-	-	5941.45	Sm	5 d	-	-	-	5932.419	Sm II	35 d	-	-	-
5951.57	Rn I	-	-	[25]	Rs	5941.168	Cu II	-	50	-	-	5932.379	Ru I	15	-	-	-
5951.50	S	-	-	[15]	Bl	5940.97	Tb	10	-	-	-	5932.163	Ce	6	-	-	-
5951.454	V	-	-	4	Me	5940.968	Fe I	6	-	-	-	5932.142	Sm	10	-	-	-
5951.282	Pr	10	1	-	-	5940.883	W	5	-	-	-	5932.140	Nd	3	-	-	-
5951.165	Tb	15	-	-	-	5940.88	Gd	3 h	-	-	-	5932.134	Ti	80	-	-	-
5951.146	Ru I	5	-	-	-	5940.86	A I	-	[2]	-	-	5931.88	Dy	2	-	-	Ed
5950.98	Yb	-	-	8	Me	5940.849	Ce	40	-	-	-	5931.79	N II	-	[150]	-	Fl
5950.77	Ti II	-	-	6	MI	5940.838	La I	4	-	-	-	5931.717	Ce	4	-	-	-
5950.65	Yb	3	-	-	Me	5940.733	Pr	10	1	-	-	5931.715	Fe	3	-	-	-
5950.607	Ce	8	-	-	-	5940.69	S	-	[8]	-	-	5931.679	Ta	40	-	-	-
5950.60	O	-	-	[70]	Ps	5940.68	Ti I	10	-	-	-	5931.534	Sm	3	-	-	-
5950.470	Nd	8	-	-	-	5940.638	Sm	2	-	-	-	5931.421	Nd	3	-	-	-
5950.30	Br I	-	-	[20]	Ks	5940.58	Sc	2	-	-	-	5931.241	Xe I	-	[80]	-	IMe
5950.26	I II	-	-	[50]	Ke	5940.53	Br I	-	[60 I]	-	-	5931.23	Sc	4 h	-	-	Me
5950.229	Re	5 w	-	-	-	5940.25	N II	-	[15]	-	-	5931.1	bh Yt	6	-	-	Me
5950.171	Sm	3	-	-	-	5940.17	Tb	15	-	-	-	5931.051	Ta	40 s	-	-	-
5950.0	bh Yt	4	-	-	Me	5939.913	Pr	20	2	-	-	5930.886	Sm	2	-	-	-
5949.983	Ti	2	-	-	-	5939.765	Ta	80 l	-	-	-	5930.667	La I	100	-	-	-
5949.93	Kr II	-	-	[3 h]	Me	5939.744	Nd	3	-	-	-	5930.628	La I	150	-	-	-
5949.92	I II	-	-	[2]	Mu	5939.38	Tb	15	-	-	-	5930.625	Ta	15 s	-	-	-
5949.9	bh Ti	5	-	-	L	5939.319	Ne I	-	[50]	-	-	5930.42	Cl I	-	[2]	-	Ks
5949.79	Pr	10 w	-	-	-	5939.218	Fe	4 h	-	-	-	5930.311	Ru	4	-	-	-
5949.636	Nd	10	-	-	-	5939.1	bh Zr	8	-	-	-	5930.276	Gd	6	-	-	-
5949.57	Ti II	-	-	35	MI	5939.1	bh Yt	100	-	-	-	5930.186	Fe I	30	10 h	-	-
5949.357	Fe I	4 h	-	-	-	5938.845	Sm II	50 d	-	-	-	5929.835	Ce	8	-	-	-
5949.26	A I	-	-	[10]	Ms	5938.834	Th	8	-	-	-	5929.498	Ce	5	-	-	-
5949.20	I I	-	-	[2]	Mu	5938.735	Fe	4	-	-	-	5929.487	Th	5	-	-	-
5949.175	Mo	4	-	-	-	5938.582	Th	6	-	-	-	5929.35	Hf II	3	5	-	Me
5949.138	Sm	5	-	-	-	5938.435	Ce	4	-	-	-	5929.332	U	5	-	-	-
5949.04	Ti II	20	15 wh	-	MI	5937.911	Mo	20	-	-	-	5929.199	Sm	3 l	-	-	-
5948.70	Er	12	-	-	Ed	5937.821	Ti I	60	-	-	-	5928.919	Nd	4	-	-	-
5948.67	Hg	-	-	[4]	Lf	5937.779	Eu	10	-	-	-	5928.882	Mo	100 h	-	-	-
5948.590	U	5	-	-	-	5937.715	Ce	20	-	-	-	5928.852	V	-	60 h	-	Me
5948.584	Si I	50	5	-	Ks	5937.71	Zn I	5	-	-	-	5928.805	A I	-	[200]	-	IMe
5948.48	Ho	12	-	-	Ed	5937.706	Gd	8	-	-	-	5928.728	Ce	2	-	-	-
5948.37	Sb	3	-	-	Wt	5937.59	Cu II	-	5	-	-	5928.61	I	-	[8 I]	-	Bl
5948.236	La II	2	20	-	Ks	5937.20	Er	12	-	-	-	5928.582	W	6	-	-	-
5948.195	W	2	-	-	-	5937.115	Fe	3	-	-	-	5928.503	La I	10	-	-	-
5948.03	Ho	200	-	-	Ed	5937.09	Tb	10	-	-	-	5928.361	Sm	2	-	-	-
5947.8	Hg II	-	-	[4]	Ps	5936.818	Gd	8	-	-	-	5928.339	Ce	25	-	-	-
5947.638	Ce	6	-	-	-	5936.653	Ru I	4	-	-	-	5928.205	Cb	5	2	-	-
5947.583	W	15	-	-	-	5936.32	Se I	-	[8]	-	-	5928.1	bh Sc	15	-	-	Me
5947.455	Sm	3	-	-	-	5936.218	La II	15	20	-	-	5927.958	Nd	2	-	-	-
5947.406	Nd	8	-	-	-	5936.21	Te	-	[75]	-	-	5927.873	Sm	4	-	-	-
5947.28	Yb	1	5	-	Me	5936.116	Sm II	35 d	-	-	-	5927.86	Ba	4	-	-	Lr
5947.20	Pr	5	-	-	-	5935.897	Tm	5	-	-	-	5927.82	N II	-	[50]	-	Fl
5947.068	W	4	-	-	-	5935.55	Hg	-	[4]	-	-	5927.806	Fe	10	-	-	-
5947.0	bh Zr	20	-	-	L	5935.543	Ta	15 h	-	-	-	5927.71	La II	-	30	-	Me
5946.67	Tb	10	-	-	Ed	5935.528	Sm	4	-	-	-	5927.6	Sb II	-	15	-	Dv
5946.491	Co I	70	-	-	-	5935.475	Nd	3	-	-	-	5927.406	Cb	5	5	-	-
5946.369	Sm	15	-	-	-	5935.436	Pr	3	-	-	-	5927.38	Re	2	-	-	Me
5946.36	Er	8	-	-	Ed	5935.421	Ba	4	-	-	-	5927.13	A I	-	[10]	-	Ms
5946.02	Yb	4	100	-	Me	5935.386	Co I	150	-	-	-	5927.045	W	2	-	-	-

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
		Arc	Spk., [Dis.]			Arc	Spk., [Dis.]			Arc	Spk., [Dis.]
5926.90	Cu II	10	3	5918.784	In II	-	[50]	5909.25	Er	20	-
5926.868	Ru	-	-	5918.650	In II	-	[70]	5909.20	Se I	-	[30]
5926.527	Eu	80	-	5918.552	Ti I	80	-	5909.155	Dy	3	-
5926.48	Br	-	[5]	5918.544	Rh I	20	-	5909.039	Sm	10	-
5926.47	Hf	2	-	5918.26	La II	-	4	5908.755	Eu	6	-
5926.450	Sm II	20	-	5918.05	Fe	5	-	5908.67	Pr	8	-
5926.359	Mo	70 h	20	5918.0	bh Sc	10	-	5908.60	I	-	[8]
5926.303	Ce	25	-	5917.951	Sm	3	-	5908.5	bh Zr	60	-
5926.189	Fe	4	-	5917.77	Sb II	-	[7]	5908.409	Fe	5	-
5926.1	bh Ti	5	-	5917.7	bh Zr	8	-	5908.355	Yb	20	30
5925.937	Sm	4	-	5917.629	La I	25	-	5908.252	Fe	8	-
5925.897	Ta	20	-	5917.465	Nd	2	-	5908.25	S	-	[8]
5925.894	Zr I	10	2	5917.44	Xe II	-	[50]	5908.18	Rh	2	-
5925.651	Cs	-	[60]	5916.88	Co I	2 h	-	5907.650	Ba	20	-
5925.58	Tb	10	-	5916.754	Gd	8	-	5907.50	Rn I	-	[15]
5925.56	Xe I	-	[6]	5916.65	Xe I	-	[4]	5907.486	Ce	3	-
5925.48	Sn	8	25	5916.58	A I	-	[5]	5907.36	C II	-	5
5925.466	U	3	-	5916.511	Ta	30	-	5907.313	Rh I	5	-
5925.414	Th	3	-	5916.458	Er	8	-	5907.2	Ra I	-	[8]
5925.307	Eu	20	-	5916.4	bh Zr	8	-	5907.08	Se	-	[15]
5925.25	Te	-	[8 h]	5916.368	Sm	15	-	5906.84	Os	3	-
5925.15	Se I	-	[30]	5916.365	V	-	12	5906.76	Xe I	-	[3]
5925.131	Zr I	20	-	5916.258	Fe I	25	4	5906.646	Nd	6	-
5924.98	Se I	-	[3]	5916.030	Sm	2	-	5906.608	Sm	3	-
5924.920	Eu	10	-	5915.984	Pr	4	-	5906.486	Ni I	2 h	-
5924.76	Se I	-	[40]	5915.966	In II	-	[100]	5906.429	Ne I	-	[50]
5924.73	Fe	2	-	5915.764	Eu	200 l	-	5906.276	Nd	3	-
5924.641	Sm	10	-	5915.634	In II	-	[50]	5906.26	Eu	4	-
5924.574	V I	250 W	-	5915.559	Sm	5	-	5906.07	Er	20	-
5924.184	Sm	4	-	5915.539	Co I	200 w	-	5906.069	Sm	10	-
5924.172	Pr	3	-	5915.449	In II	-	[50]	5906.015	Fe	6	-
5924.051	Ce	8	-	5915.398	U	125	-	5906.009	Ce	10	-
5923.930	Ni I	2	-	5915.306	Pr	5	-	5905.808	Nd	5	-
5923.792	Mo	8 h	-	5915.168	Dy	5	-	5905.683	Fe	12	8 h
5923.74	Rh I	3	-	5914.919	Sm	3	-	5905.587	Co I	2 h	-
5923.45	Fe	4 h	-	5914.835	Ce	8	-	5905.45	Br I	-	[20]
5923.4	bh C	-	-	5914.832	In II	-	[50]	5905.13	Xe II	-	[100]
5923.307	Sm	15	-	5914.7	Si	-	2	5905.04	In	-	15
5923.3	bh Zr	8	-	5914.68	Eu	5 h	-	5905.031	W	4	-
5923.058	Fe	4	-	5914.679	In II	-	[70]	5904.9	bh Ti	12	-
5922.952	Ce	3	-	5914.5	bh Cr	2	-	5904.71	Tb	15	-
5922.790	Nd	5	-	5914.401	Nd	5	-	5904.54	Gd	8	-
5922.709	Ne I	-	[25]	5914.397	In II	-	[30]	5904.480	Cb	3 h	2 h
5922.550	Xe I	-	[20]	5914.395	Th	12	3	5904.462	Xe I	-	[20]
5922.394	Sm	4	-	5914.293	Mo	4	-	5904.448	Pr	9	-
5922.365	Co I	3	-	5914.162	Fe I	50	25 h	5904.425	Ru	4	-
5922.364	Nd	2	-	5914.12	Er	8	-	5904.333	Ta	2 w	-
5922.16	Tb	10	-	5913.885	Sm	20	-	5904.308	La I	6	-
5922.125	Ce	3	-	5913.730	Ti I	3	-	5904.29	Ho	12	-
5922.123	Ti I	100	100	5913.633	Ne I	-	[250]	5904.178	Th	8	1
5922.027	Gd	4	-	5913.567	Sm	10	-	5904.04	Gd	8	-
5922.0	bh Ti	12	-	5913.543	Gd	10	-	5904.007	Rh	2 h	-
5921.85	Xe I	-	[10]	5913.398	W	3	-	5903.982	Os	3	-
5921.820	Nd	2	-	5913.062	Fe	3	-	5903.872	In II	-	[15]
5921.76	Ho	200	-	5912.912	Ce	20	-	5903.80	Cb	5	2
5921.50	Xe II	-	[3 whl]	5912.844	Ta	2	-	5903.755	In II	-	[150]
5921.446	Ru	25	-	5912.834	Fe	10	-	5903.626	In II	-	[500]
5921.357	W	3	-	5912.80	Xe II	-	[5]	5903.565	Sm	20 d	-
5921.343	Gd	6	-	5912.7	bh Yt	3	-	5903.472	In II	-	[70]
5921.248	Sm	3	-	5912.621	Sm	15	-	5903.367	In II	-	[100]
5921.217	Nd	10	-	5912.33	Sb	5	-	5903.332	Ti I	40	-
5921.028	W	2	-	5912.2	bh Yt	10	-	5903.243	In II	-	[100]
5920.992	Sm	15	-	5912.122	Mo	6	-	5903.137	In II	-	[100]
5920.90	I II	-	[15]	5912.084	A I	-	[500]	5903.127	Pr	8	-
5920.8	bh La	50	-	5911.90	Xe I	-	[5]	5903.094	Sm	4 d	-
5920.762	Pr	10	-	5911.72	Kr	-	[10 whl]	5903.045	In II	-	[70]
5920.587	W	3	-	5911.5	bh Zr	8	-	5902.972	In II	-	[30]
5920.61	I II	-	[15]	5911.417	Gd	3	-	5902.94	Hf	15	3
5920.438	Ce	15	-	5911.131	Re	2 h	-	5902.93	Yt I	5	-
5920.39	Yb	1	10	5910.757	Sm	10 d	-	5902.792	Ne I	-	[5]
5920.35	Tb	10	-	5910.7	bh Pb	8	-	5902.758	Eu	30	-
5919.997	Fe	4	4	5910.64	Sb	-	2 h	5902.665	W	20	-
5919.855	Rn I	-	[15]	5910.597	Fe	5	-	5902.660	Ce	2	-
5919.84	Rn I	-	[15]	5910.289	W	2	-	5902.605	Sm	15	-
5919.811	Nd	3	-	5910.268	Nd	2 l	-	5902.527	Fe	6	-
5919.4	Kr	-	[2 wh]	5910.134	Ce	15	-	5902.497	U	8	-
5919.342	Ru I	20	-	5910.100	Tb	10	-	5902.463	Ne I	-	[50]
5919.327	Sm	60	-	5909.992	Rb	3 h	-	5902.421	Sm	25 d	8
5919.310	Nd	5	-	5909.986	Fe I	2	-	5902.40	Tb	15	-
5919.11	So I	6 h	-	5909.955	Eu	30	-	5902.182	Cr	4	-
5919.037	Ne I	-	[8]	5909.875	Ce	15	-	5902.119	Nd	3	-
5918.949	Ta	80 s	-	5909.874	Nd	10	-	5902.097	Ne I	-	[3]
5918.914	Ne I	-	[250]	5909.67	Xe II	-	[25]	5902.09	Er	30	-
5918.899	In II	-	[30]	5909.38	Se I	-	[25]	5901.990	W	3	-
5918.81	Kr II	-	[2 Wh]	5909.375	Eu	2 h	-	5901.953	La II	2	40

5901.9—5873.1 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5901.911	Ta	80	-	-	5893.190	Ce	2	-	-	5882.67	Kr	-	[2 whl]	Me
5901.68	Fe	3	-	-	5892.878	Ni I	6	-	IKs	5882.625	A I	-	[100]	Ma
5901.577	Tm	5	-	-	5892.670	Nd	2	-	-	5882.493	Sm	5	-	-
5901.472	Mo	30	-	-	5892.66	La II	1	4	Me	5882.33	I	-	[8]	Ev
5901.421	Sm	12	-	-	5892.633	U	4	-	-	5882.30	Ir I	10	-	-
5901.321	Ce	5 d	-	-	5892.56	Ho	50	-	Ed	5882.295	Ta	80	-	-
5901.227	W	8	-	-	5892.448	Ta	2 l	-	-	5882.16	Gd	10	-	Ks
5901.21	Cu II	-	5	Sh	5892.401	Sm	5 d	-	-	5881.8950	Ne I	-	[1000]	S
5901.20	Sb II	-	[5]	Lg	5892.294	Mo	20	-	-	5881.526	Mo	20	-	-
5901.086	Zr I	4	-	-	5892.231	Pr	10	1	-	5881.33	Nd	3	-	Ks
5900.93	Rn I	-	[20]	Rs	5891.906	Sm	2	-	-	5881.18	Kr I	-	[2]	Me
5900.89	Kr II	-	[8 whl]	Me	5891.65	C II	-	30	FI	5881.14	Er	30	-	Ed
5900.75	La I	3	-	Me	5891.614	W	12	-	-	5881.077	Co I	4	-	-
5900.674	C	3 w	-	-	5891.562	Mo	25 h	-	-	5880.784	Eu	3	-	-
5900.616	Cb	200	200	-	5891.528	Nd	20	-	-	5880.647	La II	30	50	-
5900.430	Nd	5	-	-	5891.43	Te	-	[15]	BI	5880.54	Tb	15	-	Ed
5900.00	Ho	8	-	Ed	5891.416	Sm	15	-	-	5880.306	Ti I	60	125	-
5899.757	Sm	2	-	-	5891.303	Ru	4	-	-	5880.25	Nd	3	-	Ks
5899.74	Te	-	[25]	BI	5891.29	Se	-	[8]	Bt	5880.223	W	15	-	-
5899.678	Mo	12	-	-	5891.269	Eu	200	-	-	5880.19	Cd II	4	3	Vs
5899.576	Ir I	2	-	-	5891.12	Tb	10	-	Ed	5879.994	Fe I	6	-	-
5899.491	Nd	3	-	-	5890.98	S	-	[8]	BI	5879.94	Yt I	3	-	Me
5899.465	Tm	10	-	-	5890.626	Sm	4	-	-	5879.900	Kr I	-	[50]	IJa
5899.414	Th	6	-	-	5890.503	Nd	5	-	-	5879.85	Tb	10	-	Ed
5899.40	Tb	15	-	Ed	5890.484	Co I	7	-	-	5879.797	Zr I	60	-	-
5899.322	Ti I	150	150	-	5890.45	Hf	8	-	Me	5879.782	Fe	8	-	-
5899.171	Nd	2	-	-	5890.333	W	7	-	-	5879.585	Sm I	2	-	-
5899.02	I I	-	[25]	Db	5890.26	In	-	10	Sq	5879.264	Sm	2	-	-
5898.971	Ru	6	-	-	5890.16	Hg	-	[40]	Wd	5879.253	Pr	10	1	-
5898.962	Sm	25	-	-	5889.989	Cr	12	-	-	5878.92	Xe I	-	[6]	Me
5898.94	Rh	3	-	Me	5889.978	Mo	50 h	-	-	5878.896	Ce	3	-	-
5898.867	Nd	3	-	-	5889.97	C II	-	60	FI	5878.70	Se I	-	[15]	Rd
5898.84	Tb	25	-	Ed	5889.953	Na I	9000 R	1000 R	Hz	5878.378	Sm	15	-	-
5898.825	Mo	8	-	-	5889.75	S I	-	[5]	Ms	5878.265	Th	8	-	-
5898.80	Yb	3	50 h	Me	5889.74	Se II	-	[15]	Bt	5878.111	Pr	10 w	-	-
5898.785	U	8	-	-	5889.695	Sm	20	-	-	5878.078	Ce	2	-	-
5898.785	Mo	8	-	-	5889.12	Xe I	-	[20]	Me	5878.070	Sm II	20	-	-
5898.56	Xe I	-	[8]	Me	5889.06	Tb	10	-	Ed	5878.008	La I	6	-	-
5898.406	Ne I	-	[20]	Ps	5888.94	Hg II	-	[20]	Ps	5878.002	Fe	5 h	-	-
5897.986	Cu II	-	25	Sh	5888.89	Te	-	[8]	BI	5877.827	Nd	3	-	-
5897.929	Ta	2 l	-	-	5888.78	Cr	3 l	-	-	5877.8	bh Sc	10	-	Me
5897.865	Mo	5	-	-	5888.675	Ti	15	-	-	5877.786	Cb	5	5	-
5897.59	Gd	7	-	Ks	5888.6	Rn	-	[80]	Nv	5877.77	Ti I	15	-	RI
5897.544	V	-	30	-	5888.592	A I	-	[300]	IMe	5877.634	La I	8	-	-
5897.47	Kr	-	[2 whl]	Me	5888.493	Ta	5	-	-	5877.56	Rn I	-	[10]	Rs
5897.379	Sm	100	-	-	5888.326	Mo	150	100	-	5877.425	Co I	4 h	-	-
5897.22	Yb	7	100 h	Me	5888.283	Th	8	-	-	5877.355	Ta	100	-	-
5896.872	Sm	3	-	-	5888.248	Sm	2	-	-	5877.24	Gd	7	-	Ks
5896.7	bh La	80	-	Me	5888.15	Tb	10	-	Ed	5876.9	bh Sc	3	-	Me
5896.65	Te	-	[25]	BI	5888.008	Cr	20	-	-	5876.894	Sm II	10	-	-
5896.61	Hf	2	-	Me	5887.907	Nd	25	-	-	5876.72	Gd	3 h	-	Ks
5896.61	Yb	5	-	Me	5887.758	Sc	4 wh	-	-	5876.7	Pb II	-	[40]	Ea
5896.278	Sm	5	-	-	5887.68	Kr I	-	[3]	Me	5876.587	Mo	25	-	-
5896.02	In	-	5	Sq	5887.58	Ho	12	-	Ed	5876.564	Cr	3	-	-
5895.923	Na I	5000 R	500 R	Hz	5887.4	bh Sc	20	-	Me	5876.344	Nd	2	-	-
5895.70	Pb	20 hl	2	Wt	5887.364	Ir	10	-	-	5876.315	Cb	10	1	-
5895.626	Tm	80	20	-	5887.268	Sm	3	-	-	5876.103	Co I	4 h	-	-
5895.62	Xe I	-	[2 h]	Me	5887.23	Lu	1	6 h	Me	5876.1	bh Yt	10	-	Me
5895.578	Nd	2	-	-	5886.952	U	3	-	-	5875.930	Sm	8	-	-
5895.497	Fe	4	-	-	5886.471	Sm	5	-	-	5875.867	He I	-	[10]	Ps
5895.288	Eu	25	-	-	5886.458	Er	30	-	-	5875.813	Nd	2	-	-
5895.196	Ta	2 h	-	-	5886.44	Gd	6	-	Ks	5875.663	W	8	-	-
5895.154	Sm	6	-	-	5886.34	Se II	-	[20]	BI	5875.618	He I	-	[1000]	IMr
5895.09	Sb II	-	[150 wh]	Lg	5886.30	Er	12	-	Ed	5875.372	Fe	15 h	-	-
5894.988	Xe I	-	[100]	IMe	5886.235	Nd	3	-	-	5875.258	Cb	5	3 wh	-
5894.847	La I	25	-	-	5886.068	Sm	3	-	-	5875.13	I	-	[15]	BI
5894.718	Sm	15 d	-	-	5885.714	Th	10	5	-	5875.090	Sm	5	-	-
5894.63	Sc I	5	-	Me	5885.619	Zr I	25	-	-	5875.018	Xe I	-	[100]	IMe
5894.6	Bi II	-	6	MI	5885.58	Hf II	-	2	Me	5874.736	La I	20	4	-
5894.56	Kr II	-	[8 whl]	Me	5885.164	Eu	6	-	-	5874.732	Pr	4	-	-
5894.47	Dy	2	-	-	5884.815	Eu	6	-	-	5874.700	Cb	30	5	-
5894.4	Rn	-	[30]	Ny	5884.701	Pr	4	-	-	5874.70	Yb	1	30 h	Me
5894.351	Zn II	3	[30]	IHz	5884.625	W	2 h	-	-	5874.6	Te I	-	[3 s]	Rd
5894.291	Pr	15 w	-	-	5884.452	Cr I	18	-	-	5874.392	Nd	2	-	-
5894.065	Ir I	20	-	-	5884.332	Mo	12	-	-	5874.229	W	8	-	-
5894.05	I I	-	[60]	Mu	5883.848	Fe I	15	10	-	5874.225	Mo	5	-	-
5893.9	bh Yt	10	-	Me	5883.663	Sm	3	-	-	5874.194	Sm	40	-	-
5893.738	Mo	5	-	-	5883.66	Hf	3	1	Me	5874.003	La II	2	6	-
5893.6	bh La	60	-	Me	5883.410	Co I	3	-	-	5874.0	bh Yt	5	-	Me
5893.498	Th	8	-	-	5883.292	Nd	15	-	-	5873.882	Ce	3	-	-
5893.46	Ge II	-	100	Lg	5882.99	Ho	200	-	Ed	5873.52	Er	8	-	Ed
5893.442	Cb	15	3	-	5882.916	Os	7	-	-	5873.500	Ir I	8	-	-
5893.43	I II	-	[8]	BI	5882.81	Yb	2	10	Me	5873.342	Nd	2	-	-
5893.376	Mo	70 h	15	-	5882.784	Nd	10	-	-	5873.219	Fe I	8	2	-
5893.29	Xe II	-	[150]	Hu	5882.724	Mo	15	-	-	5873.15	Tb	10	-	Ed

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5872.975	Eu II	300	-	-	-	5862.943	Au I	30	5	-	-	5854.16	N I	-	-	[15]	Du
5872.912	Fe	8	-	-	-	5862.511	Ce	25	-	-	-	5854.04	Kr	-	-	[4 whl]	Me
5872.828	Ne	-	-	[35]	IMe	5862.369	Eu	2	-	-	-	5853.930	U	10	-	-	-
5872.7	bh Ti	2	-	-	-	5862.363	Fe I	35	-	35	-	5853.915	Ta	2	-	-	-
5872.487	Ir I	4	-	-	-	5861.53	Al II	-	-	[25]	Sy	5853.9	Bi II	3	10	-	MI
5872.338	Er	20	-	-	Ed	5861.379	Mo	20	-	-	-	5853.679	Ba	300	100 h	-	IKs
5872.149	Ne I	-	-	[75]	Ps	5861.22	Tb	25	-	-	Ed	5853.668	Ce	5	-	-	-
5872.030	Ta	7	-	-	-	5861.155	Bi	-	-	6	Om	5853.62	Al II	-	-	[35]	Sy
5872.03	Hg I	-	-	[10]	Wt	5861.146	Nd	2	-	-	-	5853.434	In II	-	-	[300]	Ps
5871.80	Yt I	2	-	-	Me	5860.960	Eu	30	-	-	-	5853.357	Ce	4	-	-	-
5871.81	Te	-	-	[15]	Bl	5860.818	Pt	30	-	-	-	5853.187	Fe I	3 h	-	-	-
5871.77	Rh I	3	-	-	-	5860.791	Sm	5	-	-	-	5853.107	In II	-	-	[150]	Ps
5871.73	Hg II	-	-	[40]	Ps	5860.79	Lu	20	-	2	Me	5853.071	Ce	4	-	-	-
5871.649	W	7	-	-	-	5860.75	Kr	-	-	[10 whl]	Me	5853.068	Sm	4	-	-	-
5871.61	Br	-	-	[15]	Bl	5860.71	Gd	10	-	-	Me	5852.9	bh F	2	-	-	L
5871.605	Ce	20	-	-	-	5860.641	Os	8	-	-	-	5852.86	Kr I	-	-	[5]	Me
5871.52	Tb	5	-	-	Ed	5860.417	Sm II	40 d	-	-	-	5852.829	In II	-	-	[100]	Ps
5871.286	Fe	3	-	-	-	5860.315	A I	-	-	[60]	IMe	5852.751	Re	2	-	-	-
5871.058	Sm	25	-	-	-	5860.28	Ho	200	-	-	Ed	5852.63	Pr	8	-	-	-
5871.042	Nd	5	-	-	-	5860.250	Nd	3	-	-	-	5852.54	Tb	15	-	-	Ed
5871.039	Fe	4	-	-	-	5860.231	Sm	2	-	-	-	5852.4878	Ne I	-	-	[2000]	S
5870.971	Ne I	-	-	[3]	Ps	5860.2	Bi II	-	-	15 wh	MI	5852.43	Eu	4	-	-	Kn
5870.947	U	15	-	-	-	5860.10	Hg	-	-	[5]	Wd	5852.344	Ti	12	-	-	-
5870.9158	Kr I	-	-	[3000]	S	5860.1	bh Zr	80	-	-	L	5852.283	La I	10	-	-	-
5870.85	Ho	20	-	-	Ed	5859.70	Te	-	-	[8]	Bl	5852.10	Br I	-	-	[150]	Ks
5870.734	Re	4	-	-	-	5859.691	Pr	15	-	-	-	5852.026	U	4	-	-	-
5870.62	Tb	25	-	-	Ed	5859.688	Tb	12	-	-	-	5852.024	Re	40 w	-	-	-
5870.60	Gd	4 h	-	-	Ks	5859.676	Nd	2	-	-	-	5851.93	Cu II	-	-	2	Sh
5870.6	bh Ti	2	-	-	L	5859.608	Fe I	15	-	12	-	5851.89	Hg II	-	-	[8]	Ps
5870.572	Th	10	-	-	-	5859.522	Th	2	-	1	-	5851.631	Gd	20	-	-	-
5870.315	Sm	3	-	-	-	5859.51	Tb	15	-	-	Ed	5851.565	W	25	-	-	-
5870.26	A I	-	-	[2]	Ms	5859.47	Xe II	-	-	[25 wh]	Hu	5851.516	Mo	40 h	20 h	-	-
5870.014	W	7	-	-	-	5859.386	Ce	8	-	-	-	5851.09	Te	-	-	[75]	Bl
5869.971	La I	3	-	-	-	5859.38	Hg I	-	-	[30]	Wt	5851.07	Th	40	-	-	Ed
5869.780	Mo	5	-	-	-	5859.258	Sm	10 d	-	1	-	5851.061	Ce	5 d	-	-	-
5869.756	Fe	10	-	-	-	5859.197	Fe	6	-	2	-	5850.648	Pr	15 h	-	-	-
5869.606	Nd	2 h	-	-	-	5859.189	U	2	-	-	-	5850.316	V I	40	20	-	-
5869.5	bh La	50	-	-	Me	5858.907	Nd	15	-	-	-	5850.064	Er	20	-	-	-
5869.497	Zr I	8	-	-	-	5858.8	bh Yt	10	-	-	Me	5849.953	Ta	60 w	-	-	-
5869.329	Mo	50	-	-	-	5858.63	Cu II	-	-	5	Sh	5849.85	Xe I	-	-	[3h]	Me
5869.08	S	-	-	[6]	Bl	5858.55	Te	-	-	[50]	Bl	5849.728	Mo	70 h	10 h	-	-
5868.898	Cb	3	-	1	-	5858.35	Hf	2	-	-	Me	5849.710	Sm	2	-	-	-
5868.895	Nd	10	-	-	-	5858.269	Mo	200	-	200	-	5849.678	Ta	80 w	-	-	-
5868.832	Pr	10	-	1	-	5858.232	W	6	-	-	-	5849.66	Kr I	-	-	[2]	Me
5868.763	Mo	20	-	-	-	5858.2	bh C	400	-	-	L	5849.630	V	-	-	20	Me
5868.617	Sm	40	-	-	-	5858.151	Sm	2	-	-	-	5849.46	Tb	10	-	-	Ed
5868.417	Ne I	-	-	[75]	Ps	5858.150	Ce	4	-	-	-	5849.4	bh F	5	-	-	L
5868.40	Yb	-	-	6	Me	5857.760	Os	80	-	-	-	5849.1	bh Sc	20	-	-	Me
5868.265	Zr I	4	-	-	-	5857.755	Ni I	50	-	-	-	5849.10	I II	-	-	[2]	Mu
5868.14	Pd I	2	-	-	Me	5857.67	Pb I	-	-	20	Ro	5848.955	Mn	8	-	-	-
5868.091	Dy	3	-	-	-	5857.522	Nd	10	-	-	-	5848.949	La II	2	3	-	Ks
5868.06	Hg	-	-	[4]	Wd	5857.464	Co	20	-	-	-	5848.865	Ta	15 W	-	-	-
5868.043	Re	10	-	-	-	5857.456	Ca I	40	-	30	-	5848.860	Mo	50 h	-	-	-
5868.0	bh Zr	30	-	-	L	5857.34	Tb	15	-	-	Ed	5848.67	Sm II	30	-	-	Kn
5867.81	Al II	-	-	[15]	Sy	5857.133	Ce	5	-	-	-	5848.467	Gd	6	-	-	-
5867.787	Sm	50	-	-	-	5857.127	Fe	2	-	3	-	5848.385	La I	20	-	-	-
5867.783	Eu	3	-	-	-	5857.089	Sm	4	-	-	-	5848.374	Nd	2	-	-	-
5867.611	Nd	3	-	-	-	5857.06	Gd	6	-	-	Ks	5848.340	Ce	10	-	-	-
5867.572	Ca I	8	-	-	-	5857.020	Ta	4	-	-	-	5848.089	Dy	5 h	-	-	-
5867.459	Mo	4	-	-	-	5856.949	Er	8	-	-	-	5847.9	bh F	10	-	-	L
5867.389	Sm	3	-	-	-	5856.928	Eu	10	-	-	-	5847.77	Hf	3	-	-	Me
5867.33	Si	-	-	5	Sy	5856.92	Pr	8	-	-	-	5847.74	Cl I	-	-	[4]	Ks
5867.083	Nd	8	-	-	-	5856.74	Cl I	-	-	[4]	Ks	5847.7	bh Sc	20	-	-	Me
5866.93	Cr	4	-	-	-	5856.687	Nd	2	-	-	-	5847.604	Nd	2	-	-	-
5866.752	Kr I	-	-	[50]	Me	5856.616	W	15	-	-	-	5847.318	Zr I	4	-	-	-
5866.638	Eu	10 l	-	-	-	5856.509	Xe I	-	-	[15]	IMe	5847.125	Pr	10 wh	-	-	-
5866.610	Ta	60	-	-	-	5856.471	U	2	-	-	Me	5847.010	Ni I	5	-	-	-
5866.590	Re	4	-	-	-	5856.23	N I	-	-	[5]	Du	5846.71	Cl	-	-	[4]	Ks
5866.474	Cb	50	-	15	-	5856.216	Gd	10	-	-	-	5846.69	Xe	-	-	[3]	Hu
5866.462	Ti I	300	-	400	-	5856.09	C II	-	-	15	Fl	5846.586	Co I	5	-	-	-
5866.4	bh La	40	-	-	Me	5856.081	Fe	8 h	-	3	-	5846.575	Sm	3	-	-	-
5866.30	Lu	3	-	-	Me	5856.08	Pr	10	-	-	-	5846.38	Tb	10	-	-	Ed
5866.27	Se II	-	-	[75]	Bl	5856.040	Dy	3 h	-	-	-	5846.360	Nd	2	-	-	-
5866.11	Te	-	-	[15]	Bl	5855.591	La I	30	-	-	-	5846.296	V I	100	-	100 h	-
5865.870	Ta	40 w	-	-	-	5855.547	Xe II	-	-	[3 wh]	Hu	5846.21	Xe I	-	-	[2]	Me
5865.057	Nd	15	-	-	-	5855.43	Tb	10	-	-	Ed	5846.092	Cb	5	-	1	-
5864.967	Cb	3 h	-	1 h	-	5855.3	bh Yt	5	-	-	Me	5846.035	Ir I	2 h	-	-	-
5864.765	Eu	20	-	-	-	5855.294	Er	30	-	-	Ed	5846.0	bh F	5	-	-	L
5864.629	W	20	-	-	-	5855.220	Gd	8	-	-	-	5845.945	Nd	2	-	-	-
5864.491	Sm	4 h	-	-	-	5855.130	Fe	5	-	-	-	5845.87	Hf	4	-	-	Me
5864.42	Tb	10	-	-	Ed	5854.94	Tb	10	-	-	Ed	5845.868	Fe	8	-	-	-
5863.709	La II	40	-	80	-	5854.58	In	-	-	5	Sq	5845.8	bh F	30	-	-	L
5863.491	Sm II	12	-	-	-	5854.517	Yb	30	-	1	-	5845.762	Eu	30	-	-	-
5863.426	U	4	-	-	-	5854.462	Fe	3	-	-	-	5845.69	Gd	7	-	-	Ks
5863.0	bh Ti	8	-	-	L	5854.412	W	6	-	-	-	5845.65	Sb II	-	-	[15]	Lg

5845.2—5820.8 Å.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5845.272	U	20	-	-	5837.275	Ta	4	-	-	5830.130	Ce	6	-	-
5845.261	W	18	-	-	5837.2	bh Yt	6	-	Me	5830.078	Co I	15	-	-
5845.06	Si	-	2	Sy	5837.158	Yb	50	150	-	5829.726	La I	25	-	-
5845.040	La I	15	-	-	5837.139	Nd	2	-	-	5829.718	Sm	35	-	-
5845.02	Te	-	[8]	Bl	5836.722	Tm	5	-	-	5829.65	Tb	10	-	Ed
5845.003	Pr	5	-	-	5836.623	Ta	2 h	-	-	5829.598	Nd	2	-	-
5844.837	Pt	40	2	-	5836.595	Sm	2	-	-	5829.53	N I	-	[60]	Du
5844.7	Cs I	30 w	-	Fl	5836.558	Fe	2	-	-	5829.46	Eu	4 w	-	L
5844.66	Sb	2 h	-	Wt	5836.5	bh Sc	6	-	Me	5829.4	bh F	20	-	Ps
5844.656	Nd	4	-	-	5836.365	Sm II	100 d	-	-	5828.910	Ne I	-	[75]	Ps
5844.64	Pr	4 d	1	-	5836.31	C II	-	5	Fl	5828.63	Te	-	[25]	Bl
5844.606	Cr I	18	-	-	5836.3	bh F	30	-	L	5828.59	Ti II	-	[5]	El
5844.27	Cl	-	[2]	Ks	5836.047	U	30	-	-	5828.548	Ir I	2	-	-
5844.22	Ga	-	12	Kl	5835.9	bh F	20	-	L	5828.494	La II	3	4	Ks
5844.145	Fe	4	-	-	5835.839	Ce	25	-	-	5828.487	Fe	4	-	-
5843.939	Ta	15	-	-	5835.826	Er	8	-	-	5828.065	Ru I	6	-	-
5843.8	bh F	30	-	L	5835.588	Mo	20	-	-	5828.021	U	2	-	-
5843.760	Sm	8	-	-	5835.5	Xe II	-	[50 Wh]	Hu	5827.80	Se I	-	[8]	Rd
5843.746	Ce	6	-	-	5835.48	Re	2	-	Me	5827.80	C II	-	5	Me
5843.74	A I	-	[2]	Ms	5835.281	Fe	3	-	-	5827.72	Xe I	-	[2]	-
5843.528	Eu	4	-	-	5835.28	Nd	2	-	-	5827.590	Sm	3	-	-
5843.43	Xe I	-	[5]	Me	5835.2	bh F	30	-	L	5827.556	La I	15	-	-
5843.31	Te	-	[25]	Bl	5835.16	Te	-	[15]	Bl	5827.55	Tb	15	-	Ed
5843.294	U	3	-	-	5835.134	Pr	15	-	-	5827.3	bh F	2	-	-
5843.235	Cr I	2	-	-	5834.897	Cb	15	10	-	5827.255	Ce	3	-	-
5843.232	Nd	2	-	-	5834.779	Fe	6	-	-	5827.07	Kr I	-	[20]	Me
5843.175	Cd II	3	[40]	-	5834.71	N I	-	[5]	Du	5826.894	Mo	3	-	-
5843.14	Se I	-	[8]	Rd	5834.59	Tb	10	-	Ed	5826.788	Er	50	-	-
5843.110	Ce	3	-	-	5834.549	Nd	2	-	-	5826.743	Nd	15	-	Ed
5842.97	Tb	25	-	Ed	5834.33	Re	200	-	-	5826.69	Tb	10	-	-
5842.828	Ta	5	-	-	5834.263	A I	-	[60]	IMe	5826.585	Fe	2	-	-
5842.68	Se II	-	[60]	Bl	5834.244	Ce	5	-	-	5826.58	Ti II	-	[5]	El
5842.67	Er	-	-	Ed	5834.2	bh F	30	-	L	5826.45	Te	-	[50]	Bl
5842.67	Cu II	-	4	Sh	5834.008	Yb	60 h	1	-	5826.304	Co I	3	-	-
5842.6	bh F	5	-	L	5834.0	bh F	5	-	L	5826.297	Sm	4 d	-	-
5842.569	Sm II	40	-	-	5833.945	Er	12	-	-	5926.295	Ba I	150 wh	-	-
5842.49	Os	5	-	-	5833.858	Dy	3 h	-	-	5826.187	U	2	-	-
5842.484	Fe	6	-	-	5833.68	Cu II	-	5	Sh	5826.15	As II	-	6	Ro
5842.467	Cb	15	5	-	5833.64	Fe	2	10	-	5826.1	bh F	20	-	L
5842.391	Nd	25	-	-	5833.589	W	12	-	-	5826.02	Cu II	-	10	Sh
5842.23	Hf II	50	80	Me	5833.43	Br I	-	[80]	Ks	5825.872	Nd	25	-	-
5842.0	bh F	30	-	L	5833.4	bh F	30	-	-	5825.691	Fe	6	-	-
5841.987	Sm	10	-	-	5833.393	Sm	3	-	-	5825.651	Sm	9	-	-
5841.9	bh Yt	8	-	Me	5833.214	Ru I	4	-	-	5825.50	Sb II	-	[12]	Lu
5841.837	U	2	-	-	5832.94	Tb	10	-	Ed	5825.478	Sm	2	-	-
5841.44	Kr I	-	[4]	Rt	5832.859	Kr I	-	[100]	Ja	5825.205	Mo	20	-	-
5841.44	Au	5	-	Wt	5832.848	Fe	3	-	-	5825.022	Mo	15	-	-
5841.105	Er	8	-	-	5832.7	bh F	20	-	L	5824.851	Fe	3	-	-
5841.01	N I	-	[15]	Du	5832.66	I	-	[8]	Bl	5824.800	Xe I	-	[150]	IMe
5840.83	Xe I	-	[4 h]	Me	5832.6	Cs	-	[25]	Dr	5824.75	Se	-	[15]	Bl
5840.471	Gd	10	-	-	5832.6	bh F	50	-	L	5824.50	Kr I	-	[40]	Me
5840.4	bh F	30	-	L	5832.492	Ir I	2 h	-	-	5824.20	Rn I	-	[10]	Bl
5840.124	Pt	80	-	-	5832.476	Ru	4	-	-	5824.19	Te	-	[50]	Bl
5839.988	Mo	15	-	-	5832.389	U	2 h	-	-	5824.0	bh F	2	-	L
5839.885	Sm	5 d	-	-	5832.365	Sm	5 d	1	-	5824.00	Nd	5	-	Kn
5839.8	bh Zr	2	-	L	5832.281	W	6	-	-	5823.977	Sm	3	-	-
5839.791	La I	3	-	-	5832.26	Yt I	2	-	Me	5823.959	Gd	6	-	-
5839.6	bh Sc	10	-	Me	5832.09	K I	50	-	Me	5823.890	Xe I	-	[300]	IMe
5839.544	Sm	3	-	-	5832.073	Fe	4	-	-	5823.827	La I	15	-	-
5839.47	Ho	30	-	Ed	5832.027	Dy	10 h	-	-	5823.75	Nd	4 h	-	-
5839.379	Ce	10	-	-	5832.0	bh F	50	-	L	5823.723	Pr	60 w	1	-
5839.3	bh F	10	-	L	5831.925	Ce	25	-	-	5823.708	Ti I	35	50	-
5839.14	Ho	12	-	Ed	5831.769	Sm II	40 r	-	-	5823.51	Kr I	-	[3]	Me
5839.127	Nd	2	-	-	5831.693	Fe	3	-	-	5823.49	Ra I	-	[15]	Rs
5839.051	U	2	-	-	5831.624	Ni I	8	-	-	5823.458	Ce	2	-	-
5838.988	W	25	-	-	5831.582	Rh I	80	1	-	5823.371	Nd	10	-	-
5838.951	Th	12	1	-	5831.5	bh F	50	-	L	5823.197	Sm	3 h	-	-
5838.9	bh F	30	-	L	5831.47	Se II	-	[3]	Bl	5823.0	bh F	30	-	L
5838.87	Hf	2	-	Me	5831.387	Ce	3	-	-	5822.993	Ce	12	-	-
5838.77	Hg	-	[5]	Wd	5831.159	Cs II	-	[60]	Sv	5822.63	Pr	8	-	-
5838.767	Tm	20	40	-	5831.1	bh F	50	-	L	5822.614	Sm	2	-	-
5838.68	Cr I	4	-	-	5831.047	Eu	2000 W	-	-	5822.601	W	7	-	-
5838.637	Cb	200	100	-	5831.013	Sm II	80	-	-	5821.998	La I	40	-	-
5838.427	Sm II	5	-	-	5830.986	Os	3	-	-	5821.90	Ho	12	-	Ed
5838.19	As	-	125	Ro	5830.899	U	2	-	-	5821.853	Yt I	4	-	-
5838.156	Ce	15	-	-	5830.8	bh F	30	-	L	5821.839	Rh I	4	-	-
5838.148	Cb	15	2	-	5830.799	Fe	3 h	-	-	5821.79	Tb	10	-	Ed
5838.1	bh Yt	10	-	Me	5830.74	Br	-	[100]	Bl	5821.46	Hg	-	[15]	Wd
5838.05	Tb	15	-	Ed	5830.727	Nd	2 h	-	-	5821.351	Pr	6 w	-	-
5838.031	Eu	10	-	-	5830.717	V I	100	80	-	5821.31	Tb	10	-	Ed
5837.8	bh V	7	-	L	5830.63	Xe I	-	[20 h]	Me	5821.017	W	5	-	-
5837.707	U	30	1	-	5830.6	bh F	2	-	-	5820.986	Gd	10	-	-
5837.703	Fe	3	-	-	5830.587	Fe	5 h	-	-	5820.955	Nd	2	-	-
5837.5	bh F	30	-	L	5830.501	Sm	20	-	-	5820.907	Eu	30	-	-
5837.396	Au I	400 h	10	Qi	5830.16	I	-	[15]	Ke	5820.8	bh F	2	-	L

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5820.795	Ce	3	-	-	-	5812.52	K I	30	-	-	Me	5802.91	Cl I	-	-	[2]	Ks
5820.692	Mo	8	-	-	-	5812.509	Mo	4	-	-	-	5802.82	Sm	80	-	-	-
5820.673	Sm	40	-	-	-	5812.400	Ne	-	-	[15]	Ps	5802.668	Mo	30	-	-	-
5820.620	Cb	10	5	-	-	5812.3	Bi II	-	-	8	MI	5802.132	U	20	-	-	-
5820.615	Pr	5	-	-	-	5812.25	I	-	-	[8]	BI	5802.082	A I	-	-	[40]	Ms
5820.52	Xe I	-	-	[25]	Me	5812.07	Er	8	-	-	Ed	5801.96	K I	50 h	20	-	Me
5820.397	Ce	8	-	-	-	5811.936	Fe	3	-	-	-	5801.8	bh F	80	-	-	L
5820.365	Nd	2	-	-	-	5811.6	bh So	15	-	-	Me	5801.79	Sn I	2	-	-	Wt
5820.155	Ne I	-	-	[500]	IMe	5811.58	Ra I	-	-	[35]	Rs	5801.71	Hf II	7	15	-	Me
5820.10	Kr I	-	-	[15]	Me	5811.572	Nd	15	-	1	-	5801.67	Sm	25 d	-	-	-
5820.08	In	-	15	-	Sq	5811.417	Ne I	-	-	[300]	Ps	5801.6	bh F	2	-	-	L
5820.002	Eu	30	-	-	-	5811.299	Ru	4	-	-	-	5801.351	Zr I	2	-	-	-
5819.920	V	-	35	-	Me	5811.291	U	4	-	-	-	5801.3	bh Sc	10	-	-	Me
5819.9	bh F	30	-	-	L	5811.2	bh Ti	12	-	-	L	5801.230	Sm	12	-	-	-
5819.721	I II	-	-	[15]	Mu	5811.174	Tm	10	10	-	-	5801.193	Cr	3	-	-	-
5819.513	Gd	2	-	-	-	5811.104	Ta	100	-	-	-	5801.17	Kr I	-	-	[2]	Me
5819.430	Cb	20	20	-	-	5810.80	Kr I	-	-	[8]	Me	5801.17	C I	15	-	-	Ry
5819.430	Yb	7	100	-	-	5810.720	Ce	15	-	-	-	5800.918	Pr	4 d	-	-	-
5819.355	Sm	3	-	-	-	5810.622	Pr	10	-	-	-	5800.828	Th	10	-	-	-
5819.3	bh Yt	5	-	-	Me	5810.6	bh F	50	-	-	L	5800.799	U	2	-	-	-
5819.22	S II	-	-	[10]	Ig	5810.325	Sm	10 w	-	-	-	5800.770	Er	12	-	-	-
5819.11	Bi	-	2	-	Om	5810.109	Tb	10	-	-	-	5800.603	Os	50	-	-	-
5818.890	Ba I	6	3	-	-	5809.8	bh Sc	20	-	-	Me	5800.59	Lu	30	2	-	Me
5818.738	Eu II	1000	-	-	-	5809.50	Hf II	20	30	-	Me	5800.501	Sm	80	-	-	-
5818.6	bh Yt	15	-	-	Me	5809.49	Tb	15	-	-	Ed	5800.459	Mo	25	-	-	-
5818.572	Pr	10	1	-	-	5809.247	Nd	8	-	-	-	5800.283	Ba I	100	20	-	-
5818.302	Sm	10	-	-	-	5809.245	Fe I	3	5 h	-	-	5800.275	Eu	200	-	-	-
5818.3	Bi II	2	7	-	MI	5809.229	Gd	8	-	-	-	5800.25	Si	-	-	-	Sy
5818.26	Re	2	-	-	-	5809.2	bh Zr	30	-	-	L	5800.16	Kr II	-	-	[6 whs]	Me
5818.075	Re	2	-	-	-	5809.030	Mo	3	-	-	-	5800.087	Nd	3	-	-	-
5817.777	Ce	3	-	-	-	5808.884	Re	6	-	-	-	5800.0	bh Yt	15	-	-	Me
5817.756	Ru	4	-	-	-	5808.63	La II	-	-	10	Me	5799.94	Cl	-	-	[6]	Ks
5817.528	V I	100 h	-	-	-	5808.42	Hf	2	-	-	Me	5799.899	V	40	2	-	-
5817.47	Hf	3	1	-	Me	5808.332	La II	25	60	-	-	5799.798	Ce	3	-	-	Me
5817.4	bh F	5	-	-	L	5807.724	Gd	4	-	-	-	5799.78	Hf	2	-	-	-
5817.21	Tb	5	-	-	Ed	5807.7	bh F	80	-	-	L	5799.72	Se II	-	-	[8]	BI
5817.064	V I	50	-	-	-	5807.35	I	-	-	[8]	BI	5799.528	W	12	-	-	-
5816.844	Mn	10	-	-	-	5807.311	Xe I	-	-	[15]	IMe	5799.35	Sn I	-	-	8	Ro
5816.790	U	2	-	-	-	5807.143	V I	75	40	-	-	5799.18	Sn II	2 h	-	[30]	Mo
5816.78	Sr	5	-	-	-	5807.051	Gd	6	-	-	-	5798.905	V I	2	-	-	Me
5816.7	bh F	50	-	-	L	5806.985	Re	20	-	-	-	5798.9	bh F	80	-	-	L
5816.645	Ne I	-	-	[50]	Ps	5806.955	Ir I	2	-	-	-	5798.84	Se	-	-	[8]	BI
5816.510	Ta	40 w	-	-	-	5806.909	Rh I	100	1	-	-	5798.72	Ho	12	-	-	Ed
5816.51	Tm	15	-	-	Me	5806.74	Sm	12	-	-	-	5798.552	U	35	1	-	-
5816.48	N I	-	-	[15]	Du	5806.730	Fe I	10	5 h	-	-	5798.5	bh F	10	-	-	L
5816.376	Fe	15 d	10 h	-	-	5806.689	Mo	20	-	-	-	5798.473	Cr I	2 w	-	-	-
5816.371	Ir I	2	-	-	-	5806.56	La II	-	-	8	Me	5797.992	V	-	-	4	Me
5816.337	Sm	6	-	-	-	5806.44	Tb	10	-	-	Ed	5797.912	Si I	25	-	-	Ks
5815.96	Xe II	-	-	[50]	Hu	5806.433	Nd	2	-	-	-	5797.898	Cr I	4	-	-	-
5815.866	Re	50 w	-	-	-	5806.30	Si	-	-	2	Sy	5797.873	Sm	4 d	-	-	-
5815.851	Gd	10	-	-	-	5806.30	Sb	2 h	-	-	Wt	5797.740	Zr I	50	-	-	-
5815.735	Mo	12	-	-	-	5806.267	W	8	-	-	-	5797.6	bh Sc	4	-	-	Me
5815.71	Te	-	-	[15]	BI	5806.188	Mo	15	-	-	-	5797.587	La II	80	150	-	-
5815.518	Mo	20	-	-	-	5806.13	Er	8	-	-	Ed	5797.52	Rh	3	-	-	-
5815.442	Nd	2 h	-	-	-	5806.070	W	7	-	-	-	5797.448	Ti I	10	-	-	-
5815.432	Th	18 d	2	-	-	5806.00	Cu II	-	-	25	Sh	5797.43	S	-	-	[8 h]	BI
5815.367	Pr	10	-	-	-	5805.783	La II	60	120	-	-	5797.20	Sn II	2 h	-	[2]	Mc
5815.36	Tb	10	-	-	Ed	5805.76	C I	5	-	-	Ry	5796.805	Gd	8	-	-	-
5815.327	Cb	5	3	-	-	5805.690	Ba	70	-	-	-	5796.757	Cr	6	-	-	-
5815.176	Pr	15	-	-	-	5805.678	Eu	20	-	-	-	5796.542	U	3	-	-	-
5815.158	Fe	3 h	-	-	-	5805.57	I II	-	-	[5]	Mu	5796.508	W	20	-	-	-
5815.0	bh Ti	20	-	-	L	5805.53	Kr I	-	-	[20]	Me	5796.439	Th	10	1	-	-
5814.980	Ru I	25	-	-	-	5805.233	Ni I	50	-	-	-	5796.34	Cl	-	-	[6]	Ks
5814.872	Sm	60	-	-	-	5804.869	W	25 w	12	-	-	5796.078	Ni I	3	-	-	-
5814.505	Xe I	-	-	[60]	IMe	5804.7	bh F	80	-	-	L	5796.063	Ce	6	-	-	-
5814.5	bh Zr	8	-	-	L	5804.700	Sm	3	-	-	-	5795.9	bh F	100	-	-	L
5814.438	U	5	-	-	-	5804.449	Ne I	-	-	[500]	IMe	5795.789	Rh	8	-	-	-
5814.28	Er	8	-	-	Ed	5804.415	Ce	25	-	-	-	5795.78	Ra I	-	-	[35]	Rs
5814.2	bh F	5	-	-	L	5804.388	Ru	10	-	-	-	5795.773	Mo	20	-	-	-
5814.181	Cs II	-	-	[25]	Sv	5804.265	Ti I	100 h	50	-	-	5795.638	Tb	25	-	-	-
5814.153	W	3	-	-	-	5804.141	Th	12	-	-	-	5795.5	bh Cr	10	-	-	L
5813.98	Ti I	8	-	-	-	5804.098	Ne I	-	-	[75]	Ps	5795.4	bh F	10	-	-	L
5813.97	Sb	2 h	-	-	Wt	5804.028	Cb	15	5	-	-	5795.294	Sm	3	-	-	-
5813.889	Nd	30	-	-	-	5804.020	Nd	100	-	-	-	5795.172	Nd	10	-	-	-
5813.861	Mo	6	-	-	-	5803.980	Mo	10	-	-	-	5794.780	Ce	4	-	-	-
5813.843	U	5	-	-	-	5803.853	Ru	4	-	-	-	5794.578	Eu	4 wh	-	-	-
5813.7	bh F	50	-	-	L	5803.65	Hg I	-	-	[70]	Wt	5794.244	Cb	15	10	-	-
5813.63	Ra II	-	-	[500]	Rs	5803.58	I I	-	-	[25]	Db	5793.976	Nd	2 h	-	-	-
5813.593	Pr	3	-	-	-	5803.442	Yb	15	-	-	-	5793.51	N	-	-	[5]	Du
5813.13	Ho	8	-	-	Ed	5803.339	Rh	8	-	-	-	5793.51	C I	30	-	-	Ry
5813.065	Sm	8 d	-	-	-	5803.149	Tb	40	-	-	-	5793.281	Sm	15	2	-	-
5812.932	Ce	40	-	-	-	5803.114	Sm	5	-	-	-	5793.128	Si I	18	-	-	Ks
5812.84	Ti I	10	-	-	-	5803.07	Te	-	-	[50]	BI	5793.1	bh F	100	-	-	L
5812.672	Sm II	25	-	-	-	5803.068	W	7	-	-	-	5793.069	W	20	-	-	-
5812.64	Yt I	2	-	-	Me	5802.932	Gd	7	-	-	-	5792.955	Pr	3	-	-	-

5792.7—5768.1 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5792.767	Rh I	40	-	-	-	5784.76	Se II	-	-	[15]	Bl	5776.897	U	2	-	-	-
5792.719	Eu	30	-	-	-	5784.748	W	3	-	-	-	5776.84	Re	300 w	-	-	-
5792.533	Sm	3	-	-	-	5784.716	Sm	3	-	-	-	5776.768	Ta	80	-	-	-
5792.427	Th	5	-	-	-	5784.64	Ho	8	-	-	Ed	5776.684	V I	50	-	25	-
5792.411	Nd	2	-	-	-	5784.631	Er	12	-	-	-	5776.39	Xe II	-	-	[150]	Hu
5792.4	bh F	20	-	-	-	5784.46	I	-	-	[8 h]	Bl	5776.118	Nd	15	-	-	-
5791.88	Xe II	-	-	[3 h]	Hu	5784.378	V I	50	30	-	-	5776.069	Cb	30	3	-	-
5791.847	Mo	100	60	-	-	5784.18	Ba II	-	-	[40]	Rs	5776.029	Gd	10	-	-	-
5791.781	Cr	5	-	-	-	5784.065	Ba	6	2	-	-	5775.920	Pr	4 h	-	-	-
5791.776	Sm	3	-	-	-	5784.005	Mo	5	-	-	-	5775.803	Ce	3	-	-	-
5791.773	U	4	-	-	-	5783.988	Ce	3	-	-	-	5775.56	Kr	-	-	[2]	Me
5791.677	Ce	6	-	-	-	5783.934	Cr	30 h	-	-	-	5775.501	Zn I	4	-	-	1 Hz
5791.644	Tb	10	-	-	-	5783.93	Cd	5	-	-	Ps	5775.5	bh Mg	5	-	-	L
5791.605	Re	25	-	-	-	5783.89	Kr I	-	-	[10]	Me	5775.40	Lu	50	-	5	Me
5791.386	Gd	10	-	-	-	5783.8	bh Zr	5	-	-	L	5775.3	bh Sc	10	-	-	Me
5791.382	Pr	8	-	-	-	5783.711	Eu	150 s	-	-	-	5775.110	I	-	-	[30]	Ke
5791.361	W	6	-	-	-	5783.685	Nd	3 h	-	-	-	5775.091	Fe I	12	2	-	-
5791.345	La I	200	-	-	-	5783.527	Sm	8	-	-	-	5774.995	Ce	4 d	-	-	-
5791.338	Zr I	2	-	-	-	5783.52	A I	-	-	[40]	Ms	5774.861	I II	-	-	[8]	Ke
5791.323	Ce	5	-	-	-	5783.51	As II	-	-	20	Ro	5774.8	bh F	100	-	-	L
5791.117	Er	20	-	-	-	5783.503	V I	30	-	-	-	5774.774	Cr	2	-	-	-
5791.041	Fe I	6 h	2 h	-	-	5783.4	bh F	30	-	-	L	5774.557	Sb	7	-	-	Wt
5791.005	Cr I	40 wh	-	-	-	5783.33	Mo	20 h	-	-	Ks	5774.546	Mo	20	-	-	-
5790.916	Sm	3	-	-	-	5783.31	Br	-	-	[40]	Ks	5774.50	I	-	-	[25]	Ke
5790.80	Cb	-	5 h	-	-	5783.236	Ta	2	-	-	-	5774.364	Co I	2	-	-	-
5790.654	Hg I	-	[1000]	-	Wt	5783.173	U	2	-	-	-	5774.25	Pd I	3	-	-	Me
5790.50	Cl II	-	[25]	-	Ks	5783.112	Cr	30 h	-	-	-	5774.053	Ti I	70 W	50	-	-
5790.39	A I	-	[5]	-	Ms	5783.03	Re	3	-	-	-	5774.00	A I	-	-	[40]	Ms
5790.3	bh F	100	-	-	L	5782.824	Er	12	-	-	-	5774.00	Ti II	-	-	[5]	El
5790.078	Co I	2	-	-	-	5782.823	U	2	-	-	-	5773.89	Nd	4	-	-	Ks
5790.03	Se II	-	[15]	-	Bl	5782.806	Ce	5	-	-	-	5773.860	Yt I	3	-	-	-
5789.94	Yb	5	-	-	Me	5782.7	bh Yt	10	-	-	Me	5773.772	Sm	100	-	-	-
5789.842	W	7	-	-	-	5782.610	V I	30	-	-	-	5773.585	Ce	5	-	-	-
5789.833	Ce	2	-	-	-	5782.60	K I	6	-	-	Me	5773.518	W	7	-	-	-
5789.792	Cb	3	5 h	-	-	5782.436	Ce	8	-	-	-	5773.118	Ce	30	-	-	-
5789.66	Hg I	-	[500]	-	Wd	5782.359	Tm	10	5	-	-	5773.057	Ru	6	-	-	-
5789.649	Fe	8	-	-	-	5782.150	Sb	6	-	-	Sp	5772.885	Ce	15	-	-	-
5789.52	Sb II	-	[2]	-	Lg	5782.137	Mg I	2	-	-	-	5772.72	Tb	10	-	-	Ed
5789.48	A I	-	[20]	-	Ms	5782.132	Cu I	1000	-	-	1Bu	5772.71	Ti II	-	-	[3]	El I
5789.3	bh F	30	-	-	L	5782.131	Cr	2	-	-	Hi	5772.7	bh Sc	15	-	-	Me
5789.248	La I	125	-	-	-	5782.1	bh F	150	-	-	L	5772.676	Cr	6	-	-	-
5789.22	Te I	-	[9]	-	Bl	5781.964	U	3	-	-	-	5772.419	V I	50	-	-	-
5789.91	Er	8	-	-	Ed	5781.893	Sm	100	-	-	-	5772.32	K II	-	-	[15]	Bn
5789.87	Tb	10	-	-	Ed	5781.806	Cr	20	-	-	-	5772.258	Si I	30	-	-	Ks
5789.63	Er	8	-	-	Ed	5781.687	Yt II	5	5	-	-	5772.220	Ce	10	-	-	-
5788.594	U	5	-	-	-	5781.55	A I	-	-	[2]	Rs	5772.160	Nd	5	-	-	-
5788.592	Ce	3	-	-	-	5781.363	Eu	4	-	-	-	5772.116	A II	-	-	[100]	Ms
5788.556	V I	25 W	-	-	-	5781.23	I I	-	-	[15]	Db	5772.102	Zn I	4	-	-	1 Hz
5788.390	Sm	30	-	-	-	5781.195	Cr I	18	-	-	-	5772.005	W	5	-	-	-
5788.389	Cr I	8	-	-	-	5781.02	La II	-	3	-	Me	5771.988	W	12	-	-	-
5788.24	Kr I	-	[7]	-	Me	5780.815	Os	50	-	-	-	5771.931	Ta	7 I	-	-	-
5788.222	Nd	30	-	-	-	5780.777	Ti I	20	20	-	-	5771.9	bh F	100	-	-	L
5788.133	Ce	25	-	-	-	5780.74	Y	-	-	[8]	Ev	5771.740	Sm	3	-	-	-
5788.08	Hf	2	-	-	Me	5780.706	Ta	80	-	-	-	5771.668	Yb	30	50	-	-
5787.99	Cr	50 wh	-	-	-	5780.638	Mo	10 h	-	-	-	5771.480	Nd	2	-	-	-
5787.6	bh F	100	-	-	L	5780.610	U	40	-	-	-	5771.41	Kr II	-	-	[100]	Me
5787.542	Cb	80	15	-	-	5780.5	bh F	50	-	-	L	5771.08	Cb	10	2	-	-
5787.539	Sm	8	-	-	-	5780.452	Si I	15	-	-	Ks	5771.078	U	4	-	-	-
5787.29	Kr I	-	[6]	-	Me	5780.335	Cb	3	3	-	-	5771.053	Mo	15	-	-	-
5787.217	Ce	4	-	-	-	5780.207	Ce	2	-	-	-	5770.94	Tb	10	-	-	Ed
5787.151	Sm	15	-	-	-	5780.189	Mn	10	-	-	-	5770.92	Te	-	-	[35]	Bl
5787.067	I II	-	[30]	-	Ke	5780.111	Mo	12	-	-	-	5770.55	V I	18	2	-	Me
5787.05	Te	-	[8]	-	Bl	5780.017	Ta	60	-	-	-	5770.500	Nd	20	-	-	-
5787.036	Cr I	15	-	-	-	5780.01	Ho	12	-	-	Ed	5770.436	Co I	3	-	-	-
5786.986	Sm II	200	-	-	-	5779.91	Tb	15	-	-	Ed	5770.435	Ce	8	-	-	-
5786.858	Ce	3	-	-	-	5779.91	La II	-	4	-	Me	5770.307	Ne I	-	-	[50]	Ps
5786.60	Yb	-	6	-	Me	5779.4	bh F	200	-	-	-	5770.006	La I	25	-	-	-
5786.4	bh F	30	-	-	L	5779.362	Mo	20	-	-	-	5769.949	Ce	6	-	-	-
5786.23	Re	5	-	-	-	5779.293	Pr	50	-	-	-	5769.930	Er	20	-	-	-
5786.183	Pr	8	-	-	-	5779.248	Sm	50	-	-	-	5769.866	Nd	10	-	-	-
5786.160	V I	75	-	-	-	5778.94	Tb	10	-	-	Ed	5769.778	Pr	3	-	-	-
5786.07	Ho	8	-	-	Ed	5778.5	bh Zr	60	-	-	L	5769.754	Gd	8	-	-	-
5785.979	Ti I	100 W	60	-	-	5778.412	Ce	4	-	-	-	5769.748	Mo	12	-	-	-
5785.820	Cr I	15	-	-	-	5778.331	Sm	50	-	-	-	5769.59	Hg I	600	200	-	Wd
5785.75	I	-	[8 h]	-	Bl	5778.33	Re	2	-	-	-	5769.557	Eu	2 h	-	-	-
5785.692	Mo	10	-	-	-	5778.28	Ir	2	-	-	-	5769.349	La I	70	-	-	-
5785.67	Ti I	3	-	-	-	5778.28	Ra I	-	-	[35]	Rs	5769.148	Pr	3	-	-	-
5785.303	Pr	4	-	-	-	5778.190	Mo	12	-	-	-	5769.1	Te I	-	-	[6]	Rd
5785.23	Te	-	[8]	-	Bl	5777.810	U	2 h	1	-	-	5769.07	La II	30	60	-	-
5785.18	Tb	40	-	-	Ed	5777.72	Kr II	-	-	[2 wh]	Me	5769.06	Se II	-	-	[15]	Bl
5785.002	Cr	20	-	-	-	5777.665	Ba I	500 R	100 R	-	-	5768.909	Ir	3	-	-	-
5784.958	Nd	20	-	-	-	5777.6	bh F	100	-	-	L	5768.895	Ce	15	-	-	-
5784.893	Th	8	-	-	-	5777.285	Pr	4	-	-	-	5768.784	Sm	2	-	-	-
5784.848	Ce	12	-	-	-	5777.25	Te	-	-	[15]	Bl	5768.41	Ho	8	-	-	Ed
5784.8	bh F	100	-	-	L	5777.112	Zn I	10	15	-	Hz	5768.181	Th	6	-	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R
5768.100	Sm	3	-	-	-	5759.912	Pd I	4	-	-	-	5750.647	V I	50 W	-	-	-
5767.920	Ru I	7	-	-	-	5759.652	W	12	-	-	-	5750.57	Kr I	-	-	[10]	Me
5767.913	Ta	100 w	-	-	-	5759.6	bh Ti	8	-	-	L	5750.537	U	3 h	-	-	-
5767.9	Pb II	-	-	[40]	Ea	5759.503	Sm II	60	-	-	-	5750.424	O	-	-	[70]	Fh
5767.788	Th	4	-	-	-	5759.491	Ru	4	-	-	-	5750.36	I	-	-	[8]	Bl
5767.717	U	2	-	-	-	5759.43	Cu II	-	-	5 h	Sh	5750.263	W	7	-	-	-
5767.63	Sm	2	-	-	Kn	5759.0	bh Sc	2	-	-	Me	5750.195	Pt	3 h	-	-	-
5767.620	Eu	10	-	-	-	5758.881	Sm	2	-	-	-	5749.92	Yb	8	10	-	Me
5767.461	U	3	-	-	-	5758.84	A I	-	-	[5]	Ms	5749.656	Nd	10	-	-	-
5767.43	N II	-	-	[30]	Fl	5758.82	Dy	3	-	-	Ks	5749.604	Th	2	-	-	-
5767.330	Nd	5	-	-	-	5758.65	Xe II	-	-	[150]	Hu	5749.58	Ho	12	-	-	Ed
5767.23	Yb	2	10 h	-	Me	5758.527	Sm	3	-	-	-	5749.406	Gd	10	-	-	-
5767.22	Tb	10	-	-	Ed	5758.382	U	8	-	-	-	5749.379	Th	12 d	1	-	-
5767.18	Hf II	15	30	-	Me	5758.301	Ce	8	-	-	-	5749.27	Kr II	-	-	[5 whl]	Me
5767.163	Ru	5	-	-	-	5758.167	U	10	-	-	-	5749.216	W	15	-	-	-
5767.105	Sm	2	-	-	-	5758.01	Tm	15	5	-	Me	5749.186	Nd	20	-	-	-
5767.05	Sr	4	-	-	Fl	5757.965	Sm	20	-	-	-	5749.056	Nd	10	-	-	-
5766.99	Dy	3	-	-	Ks	5757.70	Ho	8	-	-	Ed	5749.02	Kr I	-	-	[5]	Me
5766.774	Eu	3	-	-	-	5757.617	Er	30	-	-	-	5748.947	Ce	8	-	-	-
5766.64	Ho	8	-	-	Ed	5757.57	Tb	15	-	-	Ed	5748.87	V I	18	10	-	-
5766.597	Ru	7	-	-	-	5757.486	Mo	10	-	-	-	5748.811	U	2	-	-	-
5766.59	Mo	5	-	-	Ks	5757.361	Sm	3	-	-	-	5748.72	Hf	4	1	-	Me
5766.561	Ta	80 w	-	-	-	5757.339	U	2	1	-	-	5748.650	Ne I	-	-	[70]	Ps
5766.434	Ce	3	-	-	-	5756.858	Ti	10	12	-	-	5748.645	Er	12	-	-	-
5766.351	Ti I	70 W	50	-	-	5756.831	Ru I	7	-	-	-	5748.47	U	2	-	-	-
5765.99	Hf	2	-	-	Me	5756.765	Sm	3	-	-	-	5748.432	Sm	4	-	-	-
5765.894	Sm	3	-	-	-	5756.400	Sm II	15	-	-	-	5748.343	Ni I	40	-	-	-
5765.652	Yt I	5	-	-	-	5756.173	Pr	25	1	-	-	5748.299	Ne I	-	-	[500]	IMe
5765.564	Sm	2	-	-	-	5756.09	W	12	-	-	-	5748.20	Xe I	-	-	[8 h]	Me
5765.412	U	2	-	-	-	5755.930	Sm	4	-	-	-	5748.154	Nd	4	-	-	-
5765.38	Hf	2	2	-	Me	5755.90	Yb	15	-	-	Me	5748.127	U	3	-	-	-
5765.340	Ce	10	-	-	-	5755.87	Te	-	-	[250]	Bl	5748.1	bh Zr	100	-	-	-
5765.29	Gd	8	-	-	Ks	5755.811	Ta	4	-	-	-	5748.072	Sm	20	-	-	-
5765.283	Mo	8	-	-	-	5755.695	Rh I	2	-	-	-	5747.88	Pr	10 Wh	-	-	-
5765.25	Te	-	-	[70]	Bl	5755.60	Kr II	-	-	[2 wh]	Me	5747.701	V I	8	-	-	-
5765.200	Eu	2000	-	-	-	5755.45	Ra	-	-	[25]	Rs	5747.670	Mo	15	-	-	-
5765.047	Os	15	-	-	-	5755.202	Nd	2	-	-	-	5747.62	Se II	-	-	[50]	Bl
5764.995	Sm	5	-	-	-	5755.085	V	2 h	2	-	Me	5747.578	Tb	60	-	-	-
5764.987	Cb	10	15	-	-	5755.04	Kr I	-	-	[2]	Me	5747.562	Th	2	-	-	-
5764.774	Ce	5	-	-	-	5754.675	Ni I	150 w	-	-	-	5747.525	Ir	2	-	-	-
5764.5	bh Sc	8	-	-	Me	5754.60	Xe I	-	-	[2 h]	Me	5747.51	Sm	3	-	-	-
5764.418	Ne I	-	-	[700]	IMe	5754.57	W	8	-	-	-	5747.473	Ru	12	-	-	-
5764.33	I I	-	-	[100]	Mu	5754.44	Cb	3	1	-	Me	5747.36	N I	-	-	[15]	Du
5764.292	Tm	50	-	-	-	5754.40	Sm	7 w	-	-	-	5747.29	N II	-	-	[50]	Fl
5764.225	Nd	3	-	-	-	5754.258	Si I	40	-	-	Ks	5747.264	W	12	-	-	-
5764.2	bh Yt	20	-	-	Me	5754.18	Xe	-	-	[3]	Hu	5747.18	A I	-	-	[2]	Ms
5764.063	Ne I	-	-	[3]	Ps	5754.154	Gd	25 r	-	-	-	5747.142	Pr	4	-	-	-
5763.92	Te	-	-	[25]	Bl	5753.8	bh Zr	20	-	-	L	5746.9	bh Yt	20	-	-	Me
5763.881	Sm	20	-	-	-	5753.692	Cr	15	-	-	-	5746.90	Cb	-	-	20 h	Me
5763.683	U	2	-	-	-	5753.61	Sn	4	15	-	Wt	5746.88	Xe II	-	-	[10 wh]	Hu
5763.572	Pt	30	-	-	-	5753.530	Nd	15	-	-	-	5746.88	Nd	2	-	-	-
5763.445	Sm	4	-	-	-	5753.381	W	7	-	-	-	5746.707	Ta	60 l	-	-	-
5763.265	Sm	3	-	-	-	5753.32	Se I	-	-	[25]	Rd	5746.617	Zr I	2	-	-	-
5763.011	Fe I	80	-	35	-	5753.136	Fe I	40	20	-	-	5746.487	Ce	3	-	-	-
5762.90	Kr I	-	-	[4]	Me	5753.115	Sm	2	-	-	-	5746.487	Sm	4	-	-	-
5762.790	Er	30	-	-	-	5753.06	Cb	-	-	30 h	Me	5746.432	Cr	12 s	-	-	-
5762.706	Pt	6	-	-	-	5753.022	Pr	5	-	-	-	5746.351	Gd	8	-	-	-
5762.648	Tb	15	-	-	-	5753.021	Th	8	-	-	-	5746.31	Te	-	-	[8]	Bl
5762.60	Te	-	-	[15]	Bl	5752.98	Kr II	-	-	[60]	Me	5745.990	Ru I	10	-	-	-
5762.388	Nd	2	-	-	-	5752.951	Re	200 w	-	-	-	5745.80	Yb	6	-	-	Me
5762.341	Ru I	2	-	-	-	5752.883	Co I	2 h	-	-	-	5745.75	Te	-	-	[8]	Bl
5762.270	Ti I	70 h	50	-	-	5752.838	Ti I	5	-	-	Bh	5745.665	Th	6	-	-	-
5762.077	Nd	10	-	-	-	5752.740	V I	10	10	-	-	5745.560	Dy	3	-	-	-
5762.01	Rn I	-	-	[10]	-	5752.64	N I	-	-	[30]	Du	5745.482	Sm	10	-	-	-
5762.0	bh Ti	20	-	-	L	5752.64	Ca	-	-	2	Ad	5745.403	Ir	2	-	-	-
5761.876	U	2	-	-	-	5752.594	Sm	3	-	-	-	5745.031	Sm	5	-	-	-
5761.845	La I	60	-	-	-	5752.56	Xe II	-	-	[15]	Hu	5744.828	Pr	5 h	-	-	-
5761.77	Sn	4	10	-	Wt	5752.548	Er	12	-	-	-	5744.92	Tb	10	-	-	Ed
5761.719	Sm	4	-	-	-	5752.53	Hf	3	5	-	Me	5744.766	Nd	25	1	-	-
5761.695	Nd	10	-	-	-	5752.524	Ce	8	-	-	-	5744.693	Ce	4	-	-	-
5761.62	Tb	10	-	-	Ed	5752.056	Fe I	8 h	-	2 h	-	5744.664	Gd	7	-	-	-
5761.614	Ia	15	-	-	-	5752.03	Se I	-	-	[8]	Rd	5744.629	Tb	10	-	-	-
5761.412	V I	25	-	-	-	5752.023	Er	4	-	-	-	5744.412	La I	80	-	-	-
5761.37	Cu II	-	-	2 h	Sh	5752.023	Ru I	10	-	-	-	5744.364	Eu	4	-	-	-
5760.978	Ce	2	-	-	-	5751.89	Tb	10	-	-	Ed	5744.226	Sm	4	-	-	-
5760.847	Ni I	50	-	-	-	5751.878	Gd	8	-	-	-	5744.138	Nd	8	-	-	-
5760.757	Sm	8 d	-	-	-	5751.762	U	3	-	-	-	5743.854	Yt I	6	1	-	-
5760.726	I II	-	-	[40]	Ke	5751.492	Os	5	-	-	-	5743.83	Ho	12	-	-	Ed
5760.585	Ce	5	-	-	-	5751.440	Cb	15	10	-	-	5743.533	Ce	25	-	-	-
5760.585	Ne I	-	-	[70]	Ps	5751.402	Mo	125	100	-	-	5743.453	V I	60	20	-	-
5760.554	Th	12	-	-	-	5751.365	Sm	4 l	-	-	-	5743.335	Sm II	20	-	-	-
5760.343	Cb	30	30	-	-	5751.12	Ho	30	-	-	Ed	5743.263	Ru	4	-	-	-
5760.211	Tm	20	5	-	-	5751.03	Xe II	-	-	[200]	Hu	5743.196	Nd	20 wh	1	-	-
5760.205	Pr	5	-	-	-	5750.952	Co I	2	-	-	-	5743.102	Tb	15	-	-	-
5759.199	Nd	5	-	-	-	5750.730	Sm	3	-	-	-	5743.043	Sm	3	-	-	-

5742.9—5719.0 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5742.94	La I	5	-	-	-	5734.54	Hf	3	1	-	Me	5726.72	Ho	8	-	-	Ed
5742.092	Nd	40	-	-	-	5734.057	Mo	20	-	-	-	5726.676	Rh I	3	-	-	-
5742.787	U	2	-	-	-	5734.014	V I	35	-	-	-	5726.59	Kr I	-	-	[20]	Me
5742.763	Nd	5	-	-	-	5733.938	Ce	20	-	-	-	5726.3	bh Mg	2	-	-	L
5742.55	Bi	30	10	Wt	-	5733.863	Gd	20	-	-	-	5726.135	Ce	5	-	-	-
5742.52	Hf	2	2	Me	-	5733.79	Tm	10	-	-	-	5726.10	Xe I	-	-	[4]	Me
5742.079	Th	12	1	-	-	5733.578	Sm	5	-	-	-	5725.854	Ce	20	-	-	-
5741.708	Mo	10	-	-	-	5733.5	Te I	-	-	[8]	Rd	5725.84	Dy	3 h	-	-	Ks
5741.66	Te	-	[70]	Bi	-	5733.490	Ta	2 h	-	-	-	5725.732	Ru I	15	-	-	-
5741.42	Tb	10	-	Ed	-	5733.48	Xe I	-	-	[4 h]	Me	5725.70	Se II	-	-	[10]	Bt
5741.349	U	3	-	-	-	5733.47	Tb	10	-	-	-	5725.661	Cb	5	2 h	-	-
5741.276	Nd	10	-	-	-	5733.42	Er	12	-	-	Ed	5725.638	V I	40	30	-	-
5741.216	Ti I	6	-	Bh	-	5733.4	bh Ti	2	-	-	L	5725.633	Re	15	-	-	-
5741.186	Sm	60	-	-	-	5733.269	Ru	6	-	-	-	5725.624	Tb	10	-	-	-
5741.170	W	7	-	-	-	5733.262	U	2	1	-	-	5725.601	Th	5	-	-	-
5741.162	Th	10	-	-	-	5733.091	V I	12	-	-	-	5725.59	Sm	40 d	-	-	-
5740.986	Co I	2 h	-	-	-	5733.058	Re	2 h	-	-	-	5725.406	Th	10	-	-	-
5740.878	Sm	80	-	-	-	5733.05	Se II	-	-	[20]	Bi	5725.294	Ir	3	-	-	-
5740.862	Nd	35	-	-	-	5732.965	Th	10	1	-	-	5725.031	Th	6	-	-	-
5740.662	La I	100	1	-	-	5732.947	Sm	100	-	-	-	5724.947	Rb I	50	-	-	IRz
5740.65	N	-	[15]	Du	-	5732.145	Gd	6	-	-	-	5724.815	Ru I	12	-	-	-
5740.625	Er	8	-	-	-	5732.090	Yt I	2	-	-	-	5724.736	Gd	8	-	-	-
5740.30	Re	50 w	-	-	-	5731.96	As II	-	15	-	Ro	5724.573	Tb	10	-	-	-
5740.199	Dy	3	-	-	-	5731.897	U	2	-	-	-	5724.488	Sm	5	-	-	-
5740.17	Xe I	-	[6]	Me	-	5731.87	Pr	10	-	-	-	5724.453	Rb I	600	-	-	IRz
5740.02	Ti I	25	-	-	-	5731.810	Nd	2	-	-	-	5724.406	Ta	2	-	-	-
5739.981	Sm	3	-	-	-	5731.770	Fe I	10	3	-	-	5724.1	bh Zr	70	-	-	L
5739.955	Nd	15	-	1	-	5731.77	Ir	2	-	-	Me	5724.073	Sc I	15	-	-	-
5739.86	I	-	[10]	Ke	-	5731.249	V I	250	-	100	-	5723.860	Nd	2	-	-	-
5739.74	Tb	10	-	Ed	-	5731.103	O	-	-	[30]	Fh	5723.66	In	-	5	-	Sq
5739.717	Os	3	-	-	-	5731.076	Os	2	-	-	-	5723.632	U	15	1	-	-
5739.676	Pd I	8	-	-	-	5731.050	Nd	2	-	-	-	5723.56	Kr I	-	[15]	-	Me
5739.656	Mo	10	-	-	-	5730.888	Eu	300	-	-	-	5723.46	Yt I	2	-	-	Me
5739.628	Ce	3	-	-	-	5730.86	Kr I	-	-	[4]	Me	5723.44	Se	-	-	[8 h]	Bt
5739.596	W	12	-	-	-	5730.84	Se II	-	-	[15]	Bi	5723.112	Mo	10	-	-	-
5739.517	A I	-	[500]	IMe	-	5730.67	N II	-	-	[15]	Fi	5723.064	W	15	-	-	-
5739.506	Ti I	70	80	-	-	5730.60	Sm	3	1	-	-	5722.793	Ru	6	-	-	-
5739.434	Re	10	-	-	-	5730.510	Ta	2 w	-	-	-	5722.735	Mo	80	60	-	-
5739.434	I I	-	[25]	Ke	-	5730.51	Pr	15 w	-	-	-	5722.707	Cb	3 h	1	-	-
5739.24	Ho	12	-	Ed	-	5730.46	Sb	12	-	-	Wt	5722.65	Al	-	10 h	-	Gn
5739.208	I II	-	[20]	Mu	-	5730.44	S	-	-	[15]	Bi	5722.63	Ho	8	-	-	Ed
5739.20	Sj	-	7	-	-	5730.431	Rh	3	-	-	-	5722.61	Pr	3 h	-	-	-
5739.188	Er	30	-	-	-	5730.14	Tb	10	-	-	Ed	5722.58	Rn I	-	-	[30]	Rs
5739.02	I II	-	[10]	Ke	-	5730.125	Sm	8	-	-	-	5722.46	Tb	10	-	-	Ed
5738.998	Eu	300	-	-	-	5730.1	bh Yt	15	-	-	Me	5722.231	Pr	3 h	-	-	-
5738.93	Tm	10	30	Me	-	5730.02	Yb	4	60	-	Me	5722.227	U	3	-	-	-
5738.917	I II	-	[5]	Mu	-	5730.0	bh C	150	-	-	L	5722.14	Xe I	-	-	[15 h]	Me
5738.912	Nd	3	-	-	-	5729.965	Ru	3	-	-	-	5722.041	In II	-	-	[70]	Ps
5738.846	I II	-	[2]	Mu	-	5729.919	Sm II	40	-	-	-	5721.974	Gd	10	-	-	-
5738.554	Cr	4	-	-	-	5729.589	Mo	10	-	-	-	5721.957	Ce	12	-	-	-
5738.40	A I	-	[20]	Ms	-	5729.450	Mo	10	-	-	-	5721.931	Os	80	-	-	-
5738.29	Se	-	[15]	Rd	-	5729.379	Ce	2	-	-	-	5721.88	Kr I	-	-	[10]	Me
5738.289	I II	-	[50]	Ke	-	5729.298	Sm	10	-	-	-	5721.80	Tb	10	-	-	Ed
5738.286	Mn	10	-	-	-	5729.294	Nd	30	-	-	-	5721.78	Cu II	-	20	-	Sh
5738.196	Cb	3	1	-	-	5729.203	Cr	8 l	-	-	-	5721.747	In II	-	-	[30]	Ps
5738.002	Sm II	15 d	-	-	-	5729.193	Cb	20	10	-	-	5721.522	In II	-	-	[15]	Ps
5737.981	Co	2 h	-	-	-	5728.95	Ho	8	-	-	Ed	5721.375	Sm	20	-	-	-
5737.96	A I	-	[5]	Ms	-	5728.887	Yb	5	-	-	-	5721.26	Au I	15	-	-	MI
5737.888	Os	3	-	-	-	5728.881	Yt II	3	25	-	-	5721.18	Sm	25	2	-	-
5737.636	Pd I	4	-	-	-	5728.83	Ra II	-	-	[25]	Rs	5720.823	Sm	4	-	-	-
5737.623	Gd	4	-	-	-	5728.769	Mo	15	-	-	-	5720.712	Ba	8	-	-	Sz
5737.355	Cb	5	2	-	-	5728.600	W	7	-	-	-	5720.609	Yt I	3	-	-	-
5737.302	U	3	-	-	-	5728.515	Sm	3	-	-	-	5720.478	Ti I	25	-	-	-
5737.3	bh V	10	-	-	-	5728.36	Pr	5	-	-	-	5720.188	Sm	30	-	-	-
5737.13	Br	-	[30]	Bi	-	5728.312	Gd	6	-	-	-	5720.176	Th	18 d	-	-	-
5737.056	V I	100	100	-	-	5728.27	In I	50	-	-	-	5720.029	Ru	6	-	-	-
5736.9	bh Sc	100	-	-	Me	5728.23	Tb	10	-	-	Ed	5720.019	La I	25	-	-	-
5736.851	Sm	40	-	-	-	5728.224	Eu	3	-	-	-	5720.011	Yb	300	8	-	-
5736.68	Tb	10	-	Ed	-	5728.143	Pt	3 h	-	-	-	5719.821	Cr I	10	-	-	-
5736.632	Cr	3	-	-	-	5727.907	Re	3	-	-	-	5719.81	Pr	6	-	-	-
5736.615	Eu	12	-	-	-	5727.872	Nd	4	-	-	-	5719.8	Bi II	-	15	-	MI
5736.609	Pd I	12	-	-	-	5727.68	P II	-	-	[15 l]	Gu	5719.63	Pr	5	1	-	-
5736.55	Lu	150	15	Me	-	5727.664	V I	75	-	-	-	5719.622	Th	8	-	-	-
5736.419	U	6	-	-	-	5727.55	Tb	15	-	-	Ed	5719.61	Xe II	-	-	[100]	Hu
5736.226	Ir	3	-	-	-	5727.4	bh Ti	5	-	-	L	5719.560	Ce	3	-	-	-
5735.972	Gd	8	-	-	-	5727.295	Rh I	6	-	-	-	5719.532	Ne I	-	-	[75]	Ps
5735.80	Yb	2	15	Me	-	5727.293	La II	12	-	-	-	5719.531	Er	12	-	-	-
5735.701	Zr I	25	-	-	-	5727.052	Mo	3 h	-	-	-	5719.53	Ho	8	-	-	Ed
5735.686	Ce	6	-	-	-	5727.029	V I	150	150	-	-	5719.225	Ne I	-	-	[500]	IMe
5735.63	N	-	[5]	Du	-	5727.020	Er	8	-	-	-	5719.21	Bi II	-	18	-	Om
5735.20	Sc	3	-	-	Me	5726.91	Xe II	-	-	[200]	-	5719.18	Hf	40	10	-	Me
5735.13	Ho	8	-	Ed	-	5726.825	Nd	25	-	-	-	5719.123	Sm	60	20	-	-
5735.087	W	50 W	25	-	-	5726.82	Au I	35	-	10	MI	5719.090	Pr	10	1	-	-
5735.004	Sm	10	-	-	-	5726.73	Se II	-	-	[25]	Bt	5719.086	Nd	15	-	-	-
5734.959	La I	15	-	-	-	5726.72	Tb	10	-	-	Ed	5719.035	Ce	40	-	-	-

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
5718.91	Br	- [30]	Bl	5709.75	In I	50 wh -	Ps	5702.307	Cr	20 -	-
5718.899	Ne I	- [150]	Ps	5709.737	Sm	8 -	-	5702.250	Sm	2 -	-
5718.81	Bi II	- 20	Wt	5709.559	Ni I	100 w [1]	-	5702.244	Nd	25 -	-
5718.79	Eu	4 wh -	Kn	5709.546	Ba	5 w -	Sz	5702.22	Pr	3 -	-
5718.458	Dy	4 -	-	5709.488	U	3 -	-	5702.19	Kr I	- [10]	Me
5718.43	Se I	- [8]	Rd	5709.407	Gd	10 -	-	5702.106	Mo	15 -	-
5718.365	I	4 -	-	5709.379	Fe I	100 h -	-	5702.075	I II	- [20]	Ke
5718.364	Ba	6 -	Sz	5709.370	Os	4 -	-	5701.566	Nd	5 -	-
5718.120	Nd	35 1	-	5709.339	Ir	5 -	-	5701.556	Fe I	50 25	-
5718.12	Se	- [8]	Bt	5709.330	Cb	10 h 3 h	-	5701.37	Se I	- [8]	Rd
5717.1	bh Zr	150 -	L	5709.14	Ho	8 -	Ed	5701.351	Gd	20 -	-
5717.99	Se I	- [15]	Rd	5709.08	Te	- [50]	Bl	5701.138	Si I	15 -	Ks
5717.916	Sm	30 -	-	5709.060	W	6 -	-	5701.117	Sm	3 -	-
5717.840	Fe I	10 2	-	5708.949	V I	35 -	-	5700.909	Th	12 3	-
5717.82	Er	8 -	Ed	5708.887	Zr I	4 -	-	5700.86	A I	- [60]	Ms
5717.61	Kr I	- [3]	Me	5708.687	In II	- [70]	Ps	5700.72	F I	- [3]	Gl
5717.494	Er	12 -	-	5708.600	Sc I	15 -	-	5700.696	Th	8 1	-
5717.30	Yb	- 15 h	Me	5708.522	In II	- [100]	Ps	5700.6	bh Ti	2 -	L
5717.246	Sc I	20 -	-	5708.467	Cb	1 3 h	-	5700.583	Mn	3 -	-
5716.965	Re	20 -	-	5708.437	Si I	40 2 h	Ks	5700.514	Cr	8 -	-
5716.873	U	4 -	-	5708.379	Tb	15 -	-	5700.471	Pt	2 h -	-
5716.533	Ta	15 s -	-	5708.312	In II	- [100]	Ps	5700.451	Th	8 1	-
5716.495	Ce	6 -	-	5708.280	Nd	60 -	-	5700.262	Sm	2 -	-
5716.480	Ti I	40 -	-	5708.227	Ti I	30 -	-	5700.240	Co I	350 -	IBu
5716.347	Cb	10 10	-	5708.128	Ru	7 -	-	5700.24	Se I	- [8]	Rd
5716.252	Xe I	- [80]	IMe	5708.07	Te	- [250]	Bl	5700.24	S I	- [25]	Ms
5716.209	V I	60 30	-	5708.036	W	4 -	-	5700.219	Sb	7 -	Kz
5716.19	Xe II	- [50 wh]	Hu	5707.992	Mo	8 -	-	5700.230	Sc I	400 R	-
5716.08	Pr	4 -	-	5707.92	Eu	4 -	Kn	5699.951	Yb	2 -	-
5716.08	Si	- 2	Sy	5707.9	bh La	10 -	Me	5699.872	U	3 -	-
5715.953	Ba	4 -	Sz	5707.84	Dy	3 -	Ks	5699.84	Kr II	- [10]	Me
5715.9	Rn	- [80]	Wa	5707.614	Pr	100 w -	-	5699.615	Sm	5 -	-
5715.716	Xe I	- [70]	IMe	5707.512	Kr I	- [40]	IJa	5699.61	Xe II	- [100]	Hu
5715.694	U	3 -	-	5707.480	Sb	6 -	Kz	5699.577	Ru I	10 -	-
5715.587	Cb	3 1	-	5707.430	Ce	3 -	-	5699.48	Sm	2 -	-
5715.396	W	5 -	-	5707.372	Nd	4 -	-	5699.386	La I	5 -	-
5715.37	Pr	4 -	-	5707.23	F I	- [4]	Gl	5699.285	Mo	20 -	-
5715.339	Ne I	- [35]	Ps	5707.094	Th	20 5	-	5699.242	Ta	80 w -	-
5715.286	Ce	3 -	-	5706.989	U	3 1	-	5699.228	Ce	40 -	-
5715.241	Ta	30 -	-	5706.980	V I	200 -	-	5699.159	Rb II	- 100	Rr
5715.223	U	2 -	-	5706.88	Ho	50 -	Ed	5699.047	Ru I	125 -	-
5715.133	Ti I	70 60	-	5706.87	Xe I	- [3]	Me	5698.974	Pt	7 -	-
5715.107	Fe I	4 h -	-	5706.79	Yb	5 1	Me	5698.95	Er	8 -	Ed
5715.086	Ni I	50 -	-	5706.758	Sm	4 -	-	5698.927	Nd	10 1	-
5714.91	Yt I	2 -	Me	5706.724	Yt I	15 1	-	5698.919	Sm	3 -	-
5714.23	Sm	6 -	-	5706.485	Cb	20 10	-	5698.721	Dy	3 -	-
5714.11	Kr I	- [2]	Me	5706.280	Ta	50 -	-	5698.69	Hg II	- [12]	Ps
5714.037	Re	6 -	-	5706.23	Si	- 2	Sy	5698.54	Xe I	- [8]	Me
5714.02	La I	15 -	-	5706.206	Nd	40 -	-	5698.518	V I	300 300	-
5713.919	Ti I	25 -	-	5706.203	Sm	25 -	-	5698.4	bh F	2 -	L
5713.855	Cb	2 -	-	5706.157	Cb	8 3	-	5698.330	Cr I	30 2	-
5713.830	Pr	6 1	-	5706.142	V	18 -	-	5698.327	U	2 1	-
5713.8	Pb II	- [10]	Ea	5706.11	S I	- [50]	Ms	5698.274	Mo	10 -	-
5713.8	bh Yt	10 -	Me	5706.042	Ba	3 -	Sz	5698.03	Cb	4 3	-
5713.75	Yb	1 10	Me	5705.987	Gd	3 h -	-	5697.994	Gd	6 -	-
5713.632	Rh	2 -	-	5705.978	Fe I	15 10	-	5697.98	Pr	5 -	-
5713.554	Ba	10 -	Sz	5705.720	Mo	40 40	-	5697.897	Cb	5 3	-
5713.49	Lu	3 15	Me	5705.719	W	6 -	-	5697.88	Se II	- [45]	Bl
5713.28	Hf	4 1	Me	5705.7	bh F	2 -	L	5697.819	W	35 -	-
5712.778	Cr I	15 -	-	5705.50	Sb II	- [20]	Lg	5697.8	bh Yt	5 -	Me
5712.635	Cr	3 -	-	5705.41	Sm	3 d -	-	5697.2	bh F	2 -	L
5712.430	Tb	15 -	-	5705.3	bh La	8 -	Me	5696.995	Ce	40 -	-
5712.402	La II	20 40	-	5704.98	Se I	- [8]	Rd	5696.733	Sm	40 -	-
5712.291	Ce	8 -	-	5704.820	Ba	5 -	Sz	5696.63	S I	- [8]	Ms
5712.21	Xe I	- [2]	Me	5704.386	Pr	8 -	-	5696.57	Ho	8 -	Ed
5712.145	Fe I	4 2	-	5704.376	W	6 -	-	5696.54	Kr I	- [3]	Me
5711.905	Ni I	50 -	-	5704.367	V	10 -	-	5696.477	Xe I	- [80]	IMe
5711.88	Rn I	- [20]	Rs	5704.306	Ta	40 -	-	5696.47	Al	- 15 h	Gn
5711.878	Ti I	50 40	-	5704.12	Sm	3 -	-	5696.43	Tm	6 15	Me
5711.798	Mo	20 -	-	5703.79	Ir	2 -	Me	5696.237	Sm	40 3	-
5711.754	Sc I	100 -	-	5703.73	Se I	- [15]	Rd	5696.215	Gd	20 -	-
5711.65	Pr	8 1	-	5703.562	V I	200 60	Me	5696.193	La I	50 -	-
5711.459	Sm	10 -	-	5703.455	Sm II	10 -	-	5696.027	Mo	12 -	-
5711.447	Ce	8 -	-	5703.327	La I, II	20 20	-	5695.93	Pr	8 -	-
5711.429	Re	25 -	-	5703.226	Ce	3 -	-	5695.840	Ce	10 -	-
5711.353	Gd	8 -	-	5703.031	Co I	2 h -	-	5695.750	Xe I	- [100]	IMe
5711.115	Mg I	4 1	-	5702.92	Dy	3 -	Ks	5695.651	Rh I	2 -	-
5710.97	Br	- [15]	Bl	5702.867	U	2 -	-	5695.55	Er	8 -	Ed
5710.928	Sm	10 -	-	5702.675	Ti I	60 40	-	5695.480	Pr	8 -	-
5710.879	Er	20 -	-	5702.545	Tb	15 -	-	5695.228	Nd	5 -	-
5710.76	N II	- [100]	Fl	5702.53	La I	5 -	-	5695.183	U	2 -	-
5710.531	I II	- [150]	Ke	5702.470	Rh I	8 -	-	5695.090	Pd I	50 -	-
5710.329	Gd	8 -	-	5702.44	Se	- [8]	Rd	5694.998	Ni I	40 -	-
5709.97	Tm	20 30	Me	5702.390	Ce	3 -	-	5694.87	Er	8 -	Ed
5709.80	Xe I	- [10 h]	Me	5702.361	Ru I	15 -	-	5694.730	Cr I	35 -	-

5694.5—5668.2 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5694.523	Dy	8 wh	-	-	-	5686.50	Pr	5 h	-	-	-	5676.932	W	10	-	-	-
5694.497	Sm	25	2	-	-	5686.49	Xe II	-	-	[2 h]	-	5676.89	P	-	-	[20]	Gu
5694.458	Ru	4	-	-	-	5686.48	Tb	15	-	-	-	5676.880	Ce	10	-	-	-
5694.4	bh Ti	8	-	-	L	5686.377	Rh I	100	-	-	-	5676.77	Ho	12	-	-	Ed
5694.390	Mo	10	-	-	-	5686.21	N II	-	-	[100]	-	5676.609	W	10	-	-	-
5693.752	W	7	-	-	-	5685.859	Ce	5	-	-	-	5676.334	Nd	10	-	-	-
5693.71	Yb	1	10	-	Me	5685.76	Ho	8	-	-	-	5676.2	bh F	5	-	-	L
5693.664	Sm	4	-	-	-	5685.759	Tb	40	-	-	-	5676.061	Sm	5	-	-	-
5693.650	Yt I	2	-	-	-	5685.74	As	-	60	-	Ro	5676.039	Tb	15	-	-	-
5693.64	Ho	12	-	-	Ed	5685.61	Pr	3	-	-	-	5676.02	N II	-	-	[100]	Fl
5693.634	Fe	3	3	-	-	5685.585	Dy	3	-	-	-	5675.971	Nd	30	-	-	-
5693.620	Dy	3 h	-	-	-	5685.456	Ta	7 W	-	-	-	5675.86	Hg I	-	-	[80]	Wd
5693.13	Sr	4	-	-	Sd	5685.419	Zr I	2	-	-	-	5675.845	Yb	20	-	-	-
5693.090	Cb	5	2	-	-	5685.204	U	6	1	-	-	5675.827	Tm	100	100	-	-
5693.028	Ru	7	-	-	-	5684.756	Er	8	-	-	-	5675.821	Er	12	-	-	-
5692.96	Te	-	-	[8]	Bl	5684.75	Tm	40	80	-	Me	5675.70	Na I	150 wh	-	-	Fl
5692.940	Ce	25	-	-	-	5684.716	Pt	6	-	-	-	5675.491	Er	8	-	-	-
5692.86	Pr	5	-	-	-	5684.647	Ne I	-	-	[25]	-	5675.439	Ti I	90	125	-	-
5692.610	Sm II	15 d	-	-	-	5684.523	Si I	30	-	-	Ks	5675.421	Co I	3 h	-	-	-
5692.522	Sm	15 d	2 d	-	-	5684.323	Re	-	-	-	-	5675.380	W	15	-	-	-
5692.52	Dy	5 h	-	-	Ks	5684.27	Eu	125	-	-	Kn	5675.263	Yt I	5	1	-	-
5692.41	Cu II	-	2	-	Sh	5684.190	Sc II	10	-	-	-	5675.15	Xe II	-	-	[5]	Hu
5692.3	bh Zr	8	-	-	L	5684.108	Gd	2	-	-	-	5675.103	Ce	8	-	-	-
5692.26	Pb	20	-	-	Wt	5683.773	Ce	2	-	-	-	5675.013	Th	8	-	-	-
5692.128	Ce	6	-	-	-	5683.73	A I	-	-	[40]	Ms	5674.964	Eu	8	-	-	-
5692.122	Gd	8	-	-	-	5683.60	Yb	2	6	-	Me	5674.76	Zr I	3	-	-	Ks
5692.11	Kr	-	-	[5 whl]	Me	5683.514	Cr	3	-	-	-	5674.70	Ho	200	-	-	Ed
5692.038	Sm	5	-	-	-	5683.339	Gd	3 h	-	-	-	5674.52	Kr II	-	-	[30 hs]	Me
5691.71	A II	-	-	[2]	Rt	5683.334	U	2	-	-	-	5674.466	Mo	30	-	-	-
5691.623	Sm	5	-	-	-	5683.216	V	50	2	-	-	5674.416	W	30	-	-	-
5691.47	Ho	200	-	-	Ed	5682.894	Mo	20	-	-	-	5674.261	U	2	-	-	-
5691.43	Br	-	-	[30]	Bl	5682.783	Ce	3	-	-	-	5674.243	Pd I	3	-	-	-
5691.388	U	4	1	-	-	5682.657	Na I	80	-	-	Hz	5674.180	Cr	4	-	-	-
5691.26	Sb	4	-	-	Wt	5682.53	Er	8	-	-	Ed	5674.13	Pr	5 w	1	-	-
5691.04	Pr	20	1	-	-	5682.483	Cr I	6 wh	-	-	-	5674.099	Sm	3	-	-	-
5690.95	Pr	10	1	-	-	5682.422	Sm	3	-	-	-	5674.03	Sr	3	-	-	Sd
5690.915	I II	-	-	[30]	Ke	5682.42	Cu II	-	20	-	Sh	5673.840	Eu	200	-	-	-
5690.470	Si I	25	-	-	Ks	5682.204	Ni I	50	-	-	-	5673.66	I	-	-	[15]	Ke
5690.356	Sm	2	-	-	-	5682.12	Ho	30	-	-	Ed	5673.633	Mo	20	-	-	Me
5690.35	Kr II	-	-	[200 whs]	Me	5681.900	A I	-	-	[500]	Ms	5673.58	Hf II	4	10	-	-
5690.251	Nd	8	-	-	-	5681.896	Pr	7	1	-	-	5673.562	W	10	-	-	-
5690.16	Ra I	-	-	[15]	Rs	5681.89	Kr II	-	-	[400]	Me	5673.01	A	-	-	[2]	Rt
5690.139	Pd I	10	-	-	-	5681.41	Ho	20	-	-	Ed	5672.9	bh F	5	-	-	L
5689.92	Yb	10	-	-	Me	5681.198	Cr	3 wh	-	-	-	5672.881	Sm	5	-	-	-
5689.91	A I	-	-	[200]	Ms	5681.1	bh Zr	8	-	-	L	5672.78	Kr II	-	-	[40 hs]	Me
5689.86	Cu II	-	5	-	Sh	5681.1	bh La	20 wh	-	-	Me	5672.452	Kr I	-	-	[50]	IJa
5689.817	Ne I	-	-	[150]	IMe	5681.086	Ru	40	-	-	-	5672.371	Sm	3	-	-	-
5689.739	Re	2 h	-	-	-	5681.053	Eu	40	-	-	-	5672.24	Te	-	-	[15]	Bl
5689.64	A I	-	-	[200]	Ms	5680.950	Re	2 h	-	-	-	5672.1	bh F	5	-	-	L
5689.519	Mo	12	-	-	-	5680.898	Zr I	50	-	-	-	5672.069	Mo	10	-	-	-
5689.506	Nd	10	-	-	-	5680.884	Os	20	-	-	-	5671.907	Cb	15	10	-	-
5689.474	Ti I	80	80	-	Bh	5680.857	Gd	6	-	-	-	5671.870	Ce	10	-	-	-
5689.257	Sm	12	-	-	-	5680.854	Sm	4	-	-	-	5671.844	Tb	10	-	-	-
5689.136	Mo	80 l	40	-	-	5680.80	Pd I	2	-	-	Me	5671.805	Sc I	300 W	-	-	-
5688.83	Si	-	2	-	Sy	5680.4	bh F	2	-	-	-	5671.62	F I	-	-	[2]	Gl
5688.764	Tb	10	-	-	-	5680.376	U	2	-	-	-	5671.550	La II	10	100	-	-
5688.61	Na	10	-	-	Me	5680.270	Ce	2	-	-	-	5671.412	Ce	3	-	-	-
5688.593	Co I	10	-	-	-	5680.199	Ba	60	-	-	-	5671.248	Dy	3	-	-	-
5688.525	Nd	150	-	-	-	5679.97	I II	-	-	[2]	-	5671.046	Re	2	-	-	-
5688.485	Ce	3	-	-	-	5679.942	Ti I	50	-	-	Bh	5671.021	Cb	200	10	-	-
5688.47	Yb	15	-	-	Kn	5679.71	Te	-	-	[25]	Bl	5670.96	Xe II	-	-	[25]	Hu
5688.460	Pr	8	1	-	-	5679.700	Sm	15	-	-	-	5670.850	V I	150	70	-	-
5688.373	Xe I	-	-	[40]	IMe	5679.64	Nd	2	-	-	-	5670.748	Sm	4	-	-	-
5688.345	Eu	2 h	-	-	-	5679.627	Ru	10	-	-	-	5670.7	bh Zr	2	-	-	L
5688.247	Ta	100 w	-	-	-	5679.56	N II	-	-	[500]	Fl	5670.18	Na I	100 Wh	-	-	Fl
5688.224	Na I	300	-	-	Hz	5679.2	bh La	10 wh	-	-	Me	5670.068	Pd I	100	-	-	-
5688.205	Sm	2	-	-	-	5679.128	Sm	4	-	-	-	5670.017	Pr	4	1	-	-
5687.758	V I	15	30	-	-	5679.022	Fe I	5	4	-	-	5669.968	Ce	50	-	-	-
5687.659	Sm	2	-	-	-	5678.79	Ir	2	-	-	Me	5669.945	Ni I	10	-	-	-
5687.635	Mo	5	-	-	-	5678.6	bh La	20 wh	-	-	Me	5669.770	Nd	40	-	-	-
5687.478	Pd I	3	-	-	-	5678.403	Tb	10	-	-	-	5669.63	Si	-	5	-	Sy
5687.40	A I	-	-	[20]	Ms	5678.339	Dy	3	-	-	-	5669.59	Tb	10	-	-	Ed
5687.4	bh Zr	20	-	-	L	5678.056	I II	-	-	[80]	Ke	5669.553	Pr	5	1	-	-
5687.36	Ir	3	-	-	Me	5677.893	Mo	25	-	-	-	5669.447	U	18	-	-	-
5687.35	Er	8	-	-	Ed	5677.805	Nd	8	-	-	-	5669.320	Nd	3	-	-	-
5687.19	Pr	4 h	-	-	-	5677.8	bh Pb	8	-	-	L	5669.030	Sc II	12	15	-	-
5687.12	Tb	15	-	-	Ed	5677.756	Ce	25	-	-	-	5668.911	Sm	8 h	-	-	-
5686.982	Sm	5	-	-	-	5677.686	Dy	3	-	-	-	5668.901	Ce	20	-	-	-
5686.826	Sc I	200	-	-	-	5677.470	Cb	5	3	-	-	5668.868	Nd	15	-	-	-
5686.791	Sm	5	-	-	-	5677.442	Gd	8	-	-	-	5668.8	bh F	5	-	-	L
5686.726	Sm	60	20	-	-	5677.248	Ce	2	-	-	-	5668.74	Sc I	2	-	-	Mo
5686.671	Gd	4	-	-	-	5677.17	Hg II	-	-	[300]	Ps	5668.449	Pr	25 w	-	-	-
5686.639	Nd	10	-	-	-	5677.1	bh F	5	-	-	L	5668.399	Pd I	3	-	-	-
5686.554	Yb	5	10 h	-	-	5677.067	Th	4	-	-	-	5668.362	V I	75	50	-	-
5686.522	Fe	10	8	-	-	5677.04	Pr	3	-	-	-	5668.29	Eu	6 h	-	-	Kn

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5668.001	Ru	4	-	-	5659.93	S	-	[600]	Bl	5652.014	Dy	10	-	-
5668.0	bh F	5	-	L	5659.873	Zr I	3	-	-	5651.993	Yb	50	80	-
5667.902	Re	100	-	-	5659.863	Sm	60	-	-	5651.945	Sm	3	-	-
5667.86	Te	-	[15]	Bl	5659.86	Tb	10	-	Ed	5651.866	Mo	10	6	-
5667.66	Er	8	-	Ed	5659.844	Pr	5	1	-	5651.734	Co I	3 h	-	-
5667.6	bh Ti	2	-	L	5659.781	Nd	15	1	-	5651.69	Al	10 h	-	Wt
5667.562	Tb	25	-	-	5659.779	Ce	6	-	-	5651.677	Sm	2	-	-
5667.56	Xe II	-	[300]	Hu	5659.621	Rh I	10	-	-	5651.53	As II	-	200	Ro
5667.525	Fe I	5 h	-	3 h	5659.58	Ho	20	-	Ed	5651.514	Nd	2	-	-
5667.519	Sm	15 w	-	-	5659.38	Xe II	-	[150]	Hu	5651.51	Te	-	[25]	Bl
5667.296	Mo	15 W	-	-	5659.130	A I	-	-	Ms	5651.49	Er	8	-	Ed
5667.164	Sc II	7	-	-	5659.109	Co I	25	-	-	5651.308	Rh I	2	-	-
5667.04	N	-	[5]	Du	5659.104	Ti I	5	-	-	5651.281	Mo	10	5	-
5666.864	Cb	3	2	-	5658.83	Hf II	1	3	Me	5651.269	Nd	5	-	-
5666.8	bh Zr	8	-	L	5658.826	Fe I	100	80	S	5651.251	W	2	-	-
5666.64	N II	-	[300]	Fl	5658.633	Cr	5 s	-	-	5651.114	Eu	4	-	-
5666.64	Er	8	-	Ed	5658.537	Fe I	30	2	-	5651.07	Au	2	-	Wt
5666.34	Ag	5	2	-	5658.48	Er	12	-	Ed	5650.83	Hf	3	1	Me
5666.277	Zr I	4	-	-	5658.334	Sc II	7	-	-	5650.782	Sm	3	-	-
5666.26	Te	-	[50]	Bl	5658.305	Ru	5	-	-	5650.703	A I	-	[1500]	IMe
5666.038	Sm	9 d	-	-	5658.29	Tm	20	2	-	5650.602	Ce	15	-	-
5665.82	A I	-	[5]	Ms	5658.278	U	4	-	-	5650.396	Sm	5	-	-
5665.747	Nd	5	-	-	5658.15	Sm	15	2	-	5650.37	Kr II	-	[10 wh]	Me
5665.631	Cb	100	30	-	5658.1	bh Zr	50	-	L	5650.284	Eu	4	-	-
5665.625	Th	10	2	-	5657.926	Th	6	-	-	5650.130	Mo	90	50	-
5665.601	Si I	20	-	-	5657.881	Sm	2	-	-	5649.867	Eu	6	-	-
5665.5	bh Zr	5	-	L	5657.870	Sc II	30	-	-	5649.697	Ni I	15	-	-
5665.427	Er	20	-	-	5657.731	La I	50	-	-	5649.5628	Kr I	-	[100]	S
5665.368	Eu	4 h	-	-	5657.61	Br	-	-	[5]	Bl	5649.56	Sc I	4 h	-
5665.261	Nd	3	-	-	5657.439	V I	150	60	-	5649.555	Ru I	7	-	-
5665.201	Ru	10	-	-	5657.209	Sm	5	-	-	5649.519	Ir I	2	-	-
5665.182	Th	5	-	-	5657.20	As II	-	60	Ro	5649.371	Cr I	9 h	-	-
5664.946	Er	12	-	-	5657.18	W	8	-	Ed	5649.30	Te	-	[250]	Bl
5664.901	Ta	60	-	-	5657.038	W	4	-	-	5649.015	W	4	-	-
5664.89	Lu	2	20	Me	5656.659	Ne I	-	[500]	IMe	5649.008	Sm	5	-	-
5664.73	S II	-	[15]	Ig	5656.6	bh F	10	-	L	5648.705	Ru	5	-	-
5664.724	Re	2 h	-	-	5656.56	Tb	10	-	Ed	5648.701	W	6	-	-
5664.71	Cb	100 r	30 r	-	5656.54	La I	3	-	Me	5648.66	A I	-	[200]	Ms
5664.7	bh F	10	-	L	5656.361	Sm	15	-	-	5648.6	bh F	20	-	L
5664.683	Ce	8	-	-	5656.29	V I	13	2	Me	5648.577	Ti I	80	60	-
5664.665	Sm	3	-	-	5656.213	Ce	3	-	-	5648.48	Yt I	12	2	Me
5664.66	Tb	15	-	Ed	5656.030	Ne I	-	[75]	Ps	5648.378	W	50 w	50 w	Bl
5664.511	Zr I	50	-	-	5656.0	bh F	10	-	L	5648.29	S	-	[25]	-
5664.47	Cu II	-	3	Sh	5655.766	Au I	35	5	-	5648.254	La I	150	-	L
5664.382	Mo	6	-	-	5655.727	Ru	6	-	-	5648.2	bh F	20	-	L
5664.337	W	2	-	-	5655.503	Sm	2	-	-	5648.10	Ho	8	-	Ed
5664.337	Mo	6	-	-	5655.498	Fe I	10	5	-	5648.097	Rb I	400	-	IRz
5664.239	U	2	-	-	5655.49	Se II	-	[8]	Bl	5648.08	C II	-	30	Fl
5664.2	bh Zr	5	-	L	5655.425	Pd I	12	-	-	5647.98	Nd	4	-	Ke
5664.040	Cr	18	-	-	5655.42	Bi II	-	12	Om	5647.60	So I	3	-	Me
5664.02	Xe	-	[2 whl]	Hu	5655.419	Mo	5	20 h	-	5647.467	Sm	2	-	-
5664.0	bh F	10	-	L	5655.179	Fe	4	-	Bu	5647.297	Sm	10 d	-	-
5664.017	Ni I	15	-	-	5655.15	Te	-	[25]	Bl	5647.224	Co I	600 w	-	-
5663.986	Ce	12	-	-	5655.128	Ce	40	-	-	5647.098	Ca	3	-	-
5663.881	Sm	8	-	-	5654.87	La I	5	-	-	5647.013	W	3	-	-
5663.872	Dy	3 h	-	-	5654.818	U	3	-	-	5646.98	S II	-	[30]	Ig
5663.8	Cs I	15 w	-	Fl	5654.8	bh La	50	-	Me	5646.97	Tb	10	-	Ed
5663.484	Ce	5	-	-	5654.645	Eu	8 h	-	-	5646.575	Ce	10	-	-
5663.183	Ce	4	-	-	5654.64	Hf	4	1	Me	5646.462	Yt I	10	10	-
5663.1	bh Zr	8	-	L	5654.48	A	-	[5]	Rt	5646.344	Sc I	3	-	-
5662.945	Sm	15 l	-	-	5654.414	U	3	1	-	5646.19	Xe I	-	[5]	Me
5662.924	Yt II	20	400	-	5654.247	Pr	4	1	-	5646.106	V I	150	150	-
5662.908	Ti I	40	-	-	5654.138	Cb	3	1	-	5645.990	Dy	5	-	-
5662.878	Re	4 w	-	-	5654.098	W	4	-	-	5645.97	Ho	12	-	Ed
5662.67	Kr I	-	[3]	Me	5654.014	Th	8	-	-	5645.911	Ta	80	-	-
5662.547	Ne I	-	[75]	IMe	5653.786	U	4	1	-	5645.888	Th	12	2	-
5662.525	Fe I	50	50	S	5653.744	Rb I	200	-	IRz	5645.801	Eu	1000	-	-
5662.51	C II	-	50	Fl	5653.666	Nd	10	-	-	5645.755	Tb	15	-	-
5662.455	Nd	4	-	-	5653.315	Gd	8	-	-	5645.70	S II	-	[10]	Ig
5662.164	Ti I	100	100	-	5653.302	Ru	4	-	-	5645.665	Si I	20	-	Ke
5662.00	A I	-	[5]	Ms	5653.29	Yb	-	5	Me	5645.305	Cb	5 h	2 h	-
5661.73	Ra II	-	[50]	Ra	5653.035	Re	10	-	-	5645.253	Os	7	-	-
5661.6	bh Ti	30	-	L	5652.958	Ce	3	-	-	5644.86	In	-	70	Sq
5661.564	Pr	10 w	-	-	5652.902	Th	8	1	-	5644.833	Gd	12	-	-
5661.488	Sm	25	-	-	5652.843	Sm	10	-	-	5644.7	bh F	20	-	L
5661.170	Sm	4	-	-	5652.84	Xe I	-	[2 h]	Me	5644.680	Yt I	15	2	-
5660.9	bh F	10	-	L	5652.793	Gd	7	-	-	5644.55	Hg II	-	[2]	Ps
5660.81	Ra I	-	[1000]	-	5652.6	bh F	20	-	L	5644.484	W	8	-	-
5660.78	Sb II	3	7	Wt	5652.570	Ne I	-	[75]	Ps	5644.472	Re	5	-	-
5660.761	Rh	4	-	-	5652.36	Se I, II	-	[8]	Rd	5644.3	bh F	20	-	L
5660.749	W	2	-	-	5652.3	bh La	50	-	Me	5644.248	U	2	1	-
5660.7	bh F	10	-	L	5652.166	Mo	10	3	-	5644.140	Ti I	150	200	-
5660.52	Er	8	-	Ed	5652.1	bh F	20	-	L	5644.127	Nd	10	-	-
5660.282	Dy	3	-	-	5652.07	Tb	15	-	Ed	5644.125	Sm	40	-	-
5660.1	Pb II	-	[4]	Ea	5652.06	Te	-	[25]	Bl	5643.677	Gd	6	-	-

5643.3—5621.4 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
5643.38	I	—	[15]	Ke	5636.709	Ru	6	—	—	5629.30	Tb	10	—	Ed
5643.372	Sm II	20	—	—	5636.7	bh F	20	—	L	5629.27	Au	3	—	Wt
5643.270	Nd	4	—	—	5636.698	Fe	2	1	—	5629.2	bh F	5	—	L
5643.245	Gd	20	—	—	5636.663	In II	—	[150]	Ps	5629.168	Cb	20	10	—
5643.195	Pr	3 h	—	—	5636.573	Tb	15	—	—	5629.120	Sm	5 d	1	—
5643.099	Ni I	5	—	—	5636.455	Pr	3	1	—	5629.0	bh Zr	80	—	L
5643.087	Co	5 h	—	—	5636.379	In II	—	[15]	Ps	5628.990	Zr I	2	—	—
5643.05	Rn I	—	[10]	Rs	5636.235	Ru I	100	—	—	5628.938	Ba	4	—	Sz
5643.00	Tl II	—	[6 d]	El	5636.119	Co I	20	—	—	5628.645	Cr I	25	2	—
5642.916	Sm	5	—	—	5636.045	In II	—	[2]	Ps	5628.6	bh La	100	—	Me
5642.91	Ho	8	—	—	5635.994	Rb II	—	100	Rr	5628.347	Ni I	5	—	—
5642.690	Pd I	10	2 h	Ed	5635.91	A	—	[2]	Rt	5628.27	Hf	2	—	Me
5642.678	Sm	2	—	—	5635.83	Fe I	4 h	2 h	—	5628.257	Cb	5	1	—
5642.674	K II	—	[25]	Dm	5635.761	Nd	25	—	—	5628.24	Ho	12	—	Ed
5642.660	Ni I	2	—	—	5635.710	Ta	25	—	—	5628.208	Ce	8	—	—
5642.62	Er	8	—	Ed	5635.57	Cu II	—	2	Sh	5628.164	U	3	1	—
5642.558	Os	4	—	—	5635.54	A I	—	[60]	Ms	5628.162	Sm	3	—	—
5642.542	Co I	2 h	—	—	5635.514	V I	35	—	—	5628.021	U	2	—	—
5642.362	Cr I	4	—	—	5635.505	W	8	—	—	5627.89	Yb	—	5	Me
5642.248	Sm	3	1	—	5635.5	bh C	—	—	L	5627.726	Co I	2	—	—
5642.108	Cb	80	20	—	5635.443	Re	2	—	—	5627.725	Sm	4	—	—
5642.041	W	15	—	—	5635.422	Cb	10	—	—	5627.644	Ir I	2	—	—
5642.011	V	—	12 h	—	5635.3	bh Ti	12	—	L	5627.641	V I	200	80	—
5642.008	Sm	4	—	—	5635.22	Cs I	10 w	—	Fl	5627.485	Dy	3	—	—
5641.880	Ni I	25	—	—	5635.18	Sb II	—	[40]	Lg	5627.38	Tb	15	—	Ed
5641.655	Ru I	7	—	—	5635.15	Al	10	—	Wt	5627.246	Nd	5	—	—
5641.620	Sm	3	—	—	5634.9	bh Zr	12	—	L	5627.224	Mo	4	2	—
5641.524	Dy	4	—	—	5634.858	Mo	30	20	—	5627.068	Eu	6	—	—
5641.464	Fe I	15	8	Bu	5634.84	Cl II	—	[18]	Ks	5626.661	Nd	2	—	—
5641.394	W	6	—	—	5634.652	Rh	3	—	—	5626.522	Er	20	—	—
5641.34	A I	—	[60]	Ms	5634.486	Ce	6 d	—	—	5626.239	Mn	3	—	—
5641.30	Cu II	—	20	Sh	5634.408	U	10	—	—	5626.071	Rh I	3	—	—
5641.07	Kr II	—	[3 hl]	Me	5634.244	Sm	3	—	—	5626.011	V I	150	—	—
5640.971	Sc	15	—	—	5633.962	Fe	20	10	—	5626.009	Sm	60	—	—
5640.8	bh F	20	—	L	5633.9	bh Zr	20	—	L	5626.0	bh La	100	—	Me
5640.787	Ce	6	—	—	5633.896	V I	8	—	—	5625.722	Nd	—	1	—
5640.768	Sm	2	—	—	5633.538	Sm	5	—	—	5625.704	I II	—	[150]	Ke
5640.62	Ho	100	—	Ed	5633.483	Gd	12	—	—	5625.701	Ba	7	—	Sz
5640.5	bh F	20	—	L	5633.24	Xe	—	[5 Whl]	Hu	5625.553	Ir	15	—	—
5640.50	C II	—	15	Fl	5633.14	Cu II	—	3	Sh	5625.5	bh F	2	—	L
5640.37	S	—	[500]	Bl	5633.092	Ce	15 w	—	—	5625.446	Re	15 w	—	—
5640.344	Er	8	—	—	5633.024	Pr	4	—	—	5625.43	N I	—	[10]	Du
5640.342	Pr	3	—	—	5633.02	Kr II	—	[100 h]	Me	5625.37	Tb	10	—	Ed
5640.327	U	3	—	—	5632.9	bh F	10	—	L	5625.368	Nd	3	—	—
5640.272	Sm	7	—	—	5632.769	Rh I	4	—	—	5625.326	Ni I	30	—	—
5640.21	Eu	4 h	—	Kn	5632.57	Er	12	—	Ed	5625.229	Ca	5 w	—	—
5640.197	Tb	15	—	—	5632.561	Eu	200 s	—	—	5624.966	Sm	15	—	—
5640.179	Ta	25	—	—	5632.484	Ce	12	—	—	5624.888	V I	40	—	—
5640.113	Ce	4	—	—	5632.474	U	8	—	—	5624.78	Xe II	—	[5 whl]	Hu
5640.06	Tl II	—	[6 d]	El	5632.471	Mo	100	50	—	5624.688	Sm	2	—	—
5639.991	Co I	5 h	—	—	5632.464	V I	18	—	—	5624.598	V I	100	—	—
5639.98	S	—	[500]	Bl	5632.352	Sm	3	—	—	5624.549	Fe I	150	125	S
5639.80	Er	12	—	Ed	5632.268	Yt I	2	—	—	5624.434	Pr	12	2	—
5639.74	Sb II	—	100 wh	Wt	5632.245	Gd	10	—	—	5624.332	Nd	3	—	—
5639.733	Th	12	4	—	5632.062	Sm	3	—	—	5624.204	V I	30	30	—
5639.636	W	6	—	—	5632.025	La I	20	—	—	5624.127	U	2	—	—
5639.544	Nd	25	—	—	5631.97	Sb II	15	[40]	Wt	5624.069	Fe I	4 h	2 h	—
5639.499	Dy	12	—	—	5631.969	W	15	—	—	5624.0	bh Zr	2	—	L
5639.301	La I	15	—	—	5631.965	Gd	6	—	—	5623.967	W	5	—	—
5639.13	Si	—	2	Sy	5631.826	W	10	—	—	5623.946	Yt I	2	—	—
5639.11	A I	—	[100]	Ms	5631.780	Sm	3	—	—	5623.76	A I	—	[60]	Ms
5639.046	Nd	5	—	—	5631.685	Sn	50	200	—	5623.754	Ce	5	—	—
5638.794	Pr	30 W	1	—	5631.64	Nd	2	—	—	5623.552	Sm	3	—	—
5638.670	Sm	3	—	—	5631.413	Er	12	—	—	5623.526	Zr I	6	—	—
5638.628	Ce	3	—	—	5631.409	Tm	80	10	—	5623.43	Ra II	—	[15]	Rs
5638.272	Fe I	40	20	—	5631.36	Hf II	1	4	Me	5623.20	N I	—	[40]	Du
5638.194	Ce	10	—	—	5631.263	W	15	—	—	5623.13	Se II	—	[300]	Bl
5638.182	Cr	6	—	—	5631.214	La I	50	—	—	5623.1	bh Cr	2	—	L
5638.005	U	2	—	—	5630.841	Sm	3	—	—	5623.046	Pr	15	2	—
5637.827	Nd	2 h	—	—	5630.66	Te	—	[25]	Bl	5623.000	Ce	8	—	—
5637.818	Yb	2	5	—	5630.44	A I	—	[10]	Ms	5622.960	Sm II	5	—	—
5637.720	Co I	20	—	—	5630.42	As II	—	6	Ro	5622.912	Gd	8	—	—
5637.62	Tb	15	—	Ed	5630.35	Fe	5	2	—	5622.715	Sm	2	—	—
5637.386	Ce	8	—	—	5630.309	Gd	6	—	—	5622.674	Ce	4	—	—
5637.29	A I	—	[20]	Ms	5630.123	Yt I	80	—	—	5622.558	U	2	—	—
5637.273	Sm	80	—	—	5629.933	W	5	—	—	5622.448	Eu	200 s	—	—
5637.26	Cd	10	—	Ps	5629.84	Tb	10	—	Ed	5622.303	Nd	2	—	—
5637.125	W	7	—	—	5629.830	Cb	3	1	—	5622.22	Si I	3	1	Ks
5637.121	Ni I	15	—	—	5629.787	Ru	4	—	—	5622.068	V I	10	—	—
5637.0	bh Zr	12	—	L	5629.765	W	5	—	—	5622.02	Er	3	—	Ed
5636.963	In II	—	[30]	Ps	5629.647	W	12	—	—	5622.012	Sm	4	—	—
5636.9	bh F	20	—	—	5629.546	Gd	20	—	—	5621.854	Pr	15 W	1	—
5636.801	U	3	—	—	5629.5	bh Zr	100	—	L	5621.798	Sm	60	—	—
5636.747	In II	—	[300]	Ps	5629.458	U	3	—	—	5621.524	U	12	1	—
5636.713	Sm	8	—	—	5629.3	bh Ti	3	—	L	5621.422	Gd	10	—	—

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	
5621.322	Pd I	2	-	-	-	5613.27	Hf	10	3	-	Me	5604.334	W	10	-	-	-	
5621.28	Fe	4	2	-	-	5613.230	Dy	4	-	-	-	5604.195	V I	15	-	-	-	
5621.219	Re	2	-	-	-	5613.19	Al II	-	-	[15]	Sy	5603.988	U	4	1	-	-	
5621.109	Ru	4	-	-	-	5613.070	Mo	20	12	-	-	5603.930	Cb	5 h	1	-	-	
5620.89	A I	-	[60]	Ms	-	5612.990	Sm	3	-	-	-	5603.8	bh Ti	5	-	-	L	
5620.885	Sm	3	-	-	-	5612.890	I	-	-	[25]	Ke	5603.651	Nd	5	-	-	-	
5620.82	As II	-	12	-	Ro	5612.89	Xe II	-	-	[2 h]	Hu	5603.645	Sm	4	-	-	-	
5620.792	U	30	1	-	-	5612.683	Ti	3	-	-	-	5603.550	Ru I	5	-	-	-	
5620.74	Er	8	-	-	Ed	5612.65	Xe I	-	-	[15]	Me	5603.518	Cb	15	5	-	-	
5620.684	Ta	80 w	-	-	-	5612.6	bh Zr	5	-	-	L	5603.198	Nd	3	-	-	-	
5620.66	Cr	3	-	-	-	5612.318	U	2	-	-	-	5603.188	Sm II	100 d	-	-	-	
5620.66	A I	-	[2]	Ms	-	5612.304	W	5	-	-	-	5603.142	Ru I	12	-	-	-	
5620.538	Nd	200	5	-	-	5612.30	Cb	-	-	4 wh	Me	5603.14	I II	-	-	[2]	Ke	
5620.527	Fe I	3 h	2 h	-	Bu	5612.264	Re	20 w	-	-	-	5602.996	Pd I	4	-	-	-	
5620.494	U	3	-	-	-	5611.857	Sm	3	-	-	-	5602.971	V	3	2	-	-	
5620.47	Ra I	-	[15]	Rs	-	5611.82	Kr I	-	-	[4]	Me	5602.956	Fe I	45	35	-	-	
5620.390	Ce	8	-	-	-	5611.807	Er	12	-	-	-	5602.913	U	5	-	-	-	
5620.265	Ti	4	-	-	-	5611.598	U	2	1	-	-	5602.836	Ca I	15	10	-	-	
5620.251	Pr	5	1	-	-	5611.59	Se	-	-	[15]	Bt	5602.779	Fe I	8	8	-	-	
5620.24	Yb	1	10	-	Me	5611.36	N I	-	-	[5]	Mt	5602.756	Mo	20	5	-	-	
5620.136	Zr I	10	-	-	-	5611.35	A I	-	-	[20]	Ms	5602.678	Nd	5	-	-	-	
5620.085	Os	30	-	-	-	5611.289	Sm	2	-	-	-	5602.56	Lu	1	5	-	Me	
5620.055	Ru	7	-	-	-	5611.185	Nd	5	-	-	-	5602.5	bh La	200	-	-	Me	
5620.042	Ir	7	-	-	-	5610.933	Mo	30	20	-	-	5602.4	bh La	100	-	-	Me	
5620.040	Fe	2	2	-	-	5610.926	Gd	6	-	-	-	5602.310	Pd I	2	-	-	-	
5619.760	Re	3	-	-	-	5610.920	Ce	15	-	-	-	5602.30	Sb	10	-	-	Wt	
5619.494	Gd	6	-	-	-	5610.905	U	30	1	-	-	5602.046	Mn	5	-	-	Fu	
5619.442	Pd I	50	2	-	-	5610.53	La II	2	40	-	Me	5601.936	Re	4	-	-	-	
5619.381	Mo	15	12	-	-	5610.519	Re	6	-	-	-	5601.918	Nd	20	-	-	-	
5619.099	Ba	10	3	-	Sz	5610.257	Ce	15	-	-	-	5601.85	A I	-	-	[2]	Ms	
5619.000	Nd	10	-	-	-	5610.219	Pr	6	1	-	-	5601.623	Pd I	8 h	-	-	-	
5619.00	A	-	[5]	Ms	-	5610.1	bh Zr	60	-	-	L	5601.620	Th	6	-	-	-	
5618.878	Xe I	-	[80]	IMe	-	5610.032	Sm	30	20	-	-	5601.5	Ra I	-	-	[35]	Rs	
5618.811	Eu	125	-	-	-	5609.724	Eu	4	-	-	-	5601.433	Nd	15	-	-	-	
5618.771	Mo	10	5	-	-	5609.698	Sm	5	-	-	-	5601.380	V I	25	-	-	-	
5618.742	W	3	-	-	-	5609.541	Mo	5	2	-	-	5601.303	Ce	50	-	-	-	
5618.7	Ba	10	-	-	Ex	5609.449	Ce	6	-	-	-	5601.264	Ca I	15	10	-	-	
5618.640	Fe I	10	8	-	-	5609.233	Mo	12	8	-	-	5601.19	Er	20	-	-	Ed	
5618.47	Te	-	[25]	Bl	-	5609.15	In	-	30	-	Sq	5601.08	A I	-	-	[60]	Ms	
5618.447	Mo	20	10	-	-	5608.95	Ag I	5 h	-	-	Bx	5601.046	Mo	10	-	-	-	
5618.18	N I	-	[3]	Mt	-	5608.90	A I	-	-	[20]	Ms	5600.854	Sm II	200	-	-	-	
5617.97	A I	-	[60]	Ms	-	5608.9	bh Zr	2	-	-	L	5600.83	Br	-	-	[30]	Bl	
5617.915	Gd	20	-	-	-	5608.863	U	4	-	-	-	5600.793	Ti	2	10	-	-	
5617.87	Se I	-	[15]	Rd	-	5608.812	Re	2	-	-	-	5600.77	Hf	2	-	-	Me	
5617.747	Sm	8 d	1	-	-	5608.8	Pb II	-	-	[40]	Ea	5600.43	A I	-	-	[40]	Ms	
5617.711	Ta	15	-	-	-	5608.624	Mo	20	12	-	-	5600.310	I	-	-	[50]	Ke	
5617.705	Nd	15	1	-	-	5608.37	Kr	-	-	[3]	Me	5600.234	Fe I	2	-	-	-	
5617.7	bh Pb	3	-	-	L	5608.346	Rh I	10	1	-	-	5600.038	Ni I	10	-	-	-	
5617.63	Kr II	-	[2]	Me	-	5608.139	Sm	4	1	-	-	5600.0	bh La	100	-	-	Me	
5617.62	Er	8	-	-	Ed	5608.139	W	6	-	-	-	5599.93	Sb II	4	-	-	[7]	Wt
5617.604	Ti	5	-	-	-	5608.022	Pd I	10	-	-	-	5599.9	bh La	50	-	-	Me	
5617.478	Pr	3	-	-	-	5607.99	Xe I	-	-	[3]	Me	5599.811	Eu	40	-	-	-	
5617.295	W	8	-	-	-	5607.712	Rh I	8	-	-	-	5599.787	Th	6	-	-	-	
5617.082	W	10	-	-	-	5607.6	bh C	15	-	-	L	5599.665	Th	2	-	-	-	
5617.047	Eu	4	-	-	-	5607.368	Eu	4	-	-	-	5599.591	Cb	5	1 h	-	-	
5616.67	Xe II	-	[150]	Hu	-	5607.217	Re	10	-	-	-	5599.563	Sm	2	-	-	-	
5616.66	Ra I	-	[250]	Rs	-	5607.03	Tb	10	-	-	Ed	5599.421	Rh I	300 w	3	-	-	
5616.63	S II	-	[5]	Ig	-	5606.91	Rn I	-	-	[15]	Rs	5599.41	Bi I	10	-	-	Wt	
5616.593	U	4	-	-	-	5606.85	Cd I	5	-	-	Ps	5599.101	Eu	10	-	-	-	
5616.54	N I	-	[60]	Du	-	5606.795	Co	2	-	-	-	5598.955	Ce	10	-	-	-	
5616.196	Gd	10	-	-	-	5606.732	A I	-	-	[500]	IMe	5598.769	Cd I	15	-	-	Ps	
5616.189	W	10	-	-	-	5606.732	Ru	6	-	-	-	5598.752	Ta	60	-	-	-	
5616.077	Co I	5	-	-	-	5606.555	Sm	2	-	-	-	5598.677	Sm	3	-	-	-	
5615.977	Ce	6	-	-	-	5606.464	Ce	5	-	-	-	5598.597	I	-	-	-	[25]	Ke
5615.749	Sm	4	-	-	-	5606.328	Yt I	12	3	-	-	5598.50	A I	-	-	-	[20]	Ms
5615.652	Fe I	400	300	-	S	5606.10	S	-	-	[700]	Bl	5598.489	Nd	4	-	-	-	-
5615.648	Eu	2	-	-	-	5605.89	Gd	10	-	-	-	5598.486	Eu	2	-	-	-	-
5615.353	Nd	5	-	-	-	5605.853	Eu	40	-	-	-	5598.486	Yb	3	-	-	-	-
5615.321	Th	10	-	-	-	5605.646	Nd	3 h	-	-	-	5598.478	Co	50	-	-	-	-
5615.301	Fe I	4	12	-	-	5605.639	Pr	10	2	-	-	5598.474	Ca I	35	20	-	-	-
5615.20	Cu II	-	5	-	Sh	5605.629	Dy	3	-	-	-	5598.362	I	-	-	-	[35]	Ke
5615.164	W	4	-	-	-	5605.608	Ru	4	-	-	-	5598.289	Fe I	20	-	-	-	-
5615.041	Sm	4	-	-	-	5605.505	Ta	5	-	-	-	5598.145	Sm	2	-	-	-	-
5614.790	Ni I	50	-	-	-	5605.462	Sm	3	-	-	-	5597.947	Ce	12	-	-	-	-
5614.755	U	2	-	-	-	5605.28	Tb	10	-	-	Ed	5597.9	bh C	50	-	-	-	L
5614.717	Ca	20	-	-	-	5605.25	A I	-	-	[5]	Ms	5597.9	bh Ti	40	-	-	-	L
5614.433	Gd	10	-	-	-	5605.205	W	5	-	-	-	5597.852	Nd	3	-	-	-	-
5614.410	Sm	4	-	-	-	5604.945	V I	60	20	-	-	5597.69	Ti	10	-	-	-	-
5614.39	S I	-	[3]	Ms	-	5604.888	Gd	10	-	-	-	5597.556	Sm	3	-	-	-	-
5614.303	Nd	10	-	-	-	5604.861	Sm	30	2	-	-	5597.46	A I	-	-	-	[500]	Ms
5614.01	Hf	3	-	-	Me	5604.683	Cd I	10	-	-	Ps	5597.379	U	6	1	-	-	-
5613.698	Ce	5	-	-	-	5604.59	Er	8	-	-	Ed	5597.346	Dy	3	-	-	-	-
5613.683	U	2	-	-	-	5604.508	Th	12 d	2	-	-	5597.292	Pr	3	1	-	-	-
5613.64	Ho	12	-	-	Ed	5604.425	Ce	4	-	-	-	5597.207	Gd	12	-	-	-	-
5613.273	U	3	-	-	-	5604.36	A I	-	-	[20]	Ms	5597.17	Tb	10	-	-	-	Ed

5596.5—5572.4 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R
5596.5	bh Zr	2	-	-	L	5588.441	Nd	2	-	-	-	5580.436	Sm	8 h	1	-	-
5596.322	Mo	10	2	-	-	5588.342	La I	40	-	-	-	5580.388	Kr I	-	-	[80]	IJa
5596.20	Sn II	5	-	[4]	-	5588.330	Ce	10	-	-	-	5580.262	Ti	7	-	-	-
5595.866	Ce	25	-	-	-	5588.25	P II	-	-	[70 I]	-	5580.1	bh Zr	12	-	-	L
5595.811	Nd	8	-	-	-	5588.191	Sm	25	-	-	-	5580.039	Eu	300	-	-	-
5595.72	Cb	-	-	4 wh	Me	5588.18	Br	-	-	[15]	Bl	5579.941	W	8	-	-	-
5595.45	Rn I	-	-	[20]	Ra	5588.150	W	6	-	-	-	5579.761	Sc I	3	-	-	-
5595.40	Hg II	-	-	[20]	Ps	5588.123	U	3	1	-	-	5579.658	Gd	8	-	-	-
5595.068	Th	8	-	-	-	5587.962	Nd	10	-	-	-	5579.647	Eu	200 s	-	-	-
5594.944	Ce	15	-	-	-	5587.865	Ni I	50	-	-	-	5579.627	Sm	10	1	-	-
5594.918	Pr	6	-	-	-	5587.741	Th	10	1	-	-	5579.371	Th	10	-	-	-
5594.89	Cb	3	1	-	-	5587.612	Nd	5	-	-	-	5579.28	Xe I	-	-	[40]	Me
5594.879	Rh I	5	-	-	-	5587.576	Fe	6	-	-	-	5579.13	Ca	-	2	-	Ad
5594.87	Xe	-	-	[8 whl]	Hu	5587.461	Sm	3	-	-	-	5579.07	Ho	8	-	-	Ed
5594.857	Re	2 h	-	-	-	5587.186	U	2	-	-	-	5578.935	Sm	10	-	-	-
5594.79	Er	8	-	-	Ed	5587.026	Th	10 d	-	-	-	5578.888	Ce	10	-	-	-
5594.768	Co I	2	-	-	-	5586.97	Cb	15	5	-	-	5578.86	S	-	-	[70]	Bl
5594.659	Fe	10	-	-	-	5586.963	Tb	10	-	-	-	5578.84	Ho	8	-	-	Ed
5594.652	Eu	4	-	-	-	5586.9	bh La	6	-	-	Me	5578.813	Pr	3	-	-	-
5594.482	Ti	10	-	-	-	5586.770	Eu	200	-	-	-	5578.783	Rb I	150	-	-	IRz
5594.458	Co	40	-	-	-	5586.763	Fe I	400	50	-	S	5578.734	Ni I	50	-	-	-
5594.454	Ca I	35	20	-	-	5586.43	Se I	-	-	[8]	Rd	5578.657	Nd	10	-	-	-
5594.425	Nd	150	-	5	-	5586.41	I I	-	-	[20]	Mu	5578.56	A	-	-	[5]	Rt
5594.37	Xe I	-	-	[6]	Me	5586.367	Yb	20	-	-	-	5578.398	Ru	25	-	-	-
5594.122	Yt I	2	-	-	-	5586.34	Se I, II	-	-	[15]	Rd	5578.29	Cb	15	5 h	-	-
5594.120	Gd	8	-	-	-	5586.249	Eu	300	-	-	-	5578.282	W	4	-	-	-
5593.735	Ni I	40	2 h	-	-	5586.22	Zn II	-	-	[4]	Vs	5578.270	Ce	12	-	-	-
5593.73	Cu II	-	5	-	Sh	5586.149	Gd	8	-	-	-	5578.23	Yb	5	-	-	Me
5593.721	Ce	4 w	-	-	-	5585.996	V I	8	8	-	-	5578.22	Cl I	-	-	[2]	Ks
5593.70	Ho	2	-	-	Ed	5585.905	Ne I	-	-	[5]	Ps	5578.06	Cb	3	1	-	-
5593.615	Th	10	1	-	-	5585.676	Ti	25	-	-	Bh	5577.745	Zn II	6	-	[2]	-
5593.572	W	6	-	-	-	5585.5	bh C	-	-	-	Vs	5577.715	Re	5 w	-	-	-
5593.474	Gd	6	-	-	-	5585.21	Zn II	12	-	[1]	Ed	5577.703	Nd	10	-	-	-
5593.450	Er	20	-	-	-	5585.18	Er	8	-	-	-	5577.70	A II	-	-	[5]	Rt
5593.372	Sc I	5	-	-	-	5584.817	Ce	10	-	-	-	5577.64	Kr I	-	-	[3 h]	Me
5593.294	Ba	12	-	-	-	5584.764	Fe	25	2	-	-	5577.416	Yt I	15	2	-	-
5593.23	Al II	-	-	[200]	Sy	5584.755	Re	40 w	-	-	-	5577.283	Ce	5	-	-	-
5593.133	I	-	-	[25]	Ke	5584.747	V I	5	5	-	-	5577.28	Rn I	-	-	[20]	Ra
5593.093	Eu	6	-	-	-	5584.636	U	6	-	-	-	5577.126	Eu	1000	-	-	-
5592.90	Te	-	-	[15]	Bl	5584.6	bh Zr	2	-	-	L	5577.038	In II	-	-	[100]	Ps
5592.671	Nd	3	-	-	-	5584.501	V I	18	18	-	-	5576.910	In II	-	-	[150]	Ps
5592.5	bh Zr	2	-	-	L	5584.444	Os	50	-	-	Bh	5576.750	In II	-	-	[300]	Ps
5592.415	V I	50	50	-	-	5584.128	Ti	10 h	-	-	-	5576.700	Nd	5	-	-	-
5592.380	Sm	15	-	-	-	5584.107	Sm	5	-	-	-	5576.504	V I	6	4	-	-
5592.306	Dy	3	-	-	-	5584.062	W	7 d	-	-	-	5576.40	Te	-	-	[100]	Bl
5592.283	Ni I	150 R	1	-	-	5584.016	Ta	60	-	-	-	5576.341	W	10	-	-	-
5592.258	Eu	25	-	-	-	5583.98	Ti I	15	-	-	Fl	5576.33	Er	8	-	-	Ed
5592.185	Co I	2	-	-	-	5583.831	Tb	10	-	-	-	5576.155	Cb	80	5	-	-
5591.919	Sm	3	-	-	-	5583.759	Th	10	1	-	-	5576.129	Gd	12	-	-	-
5591.883	Gd	20 r	-	-	-	5583.699	Sm	3	-	-	-	5576.106	Fe I	150	-	-	-
5591.75	A	-	-	[5]	Ms	5583.681	Gd	25	-	-	-	5576.049	Ne I	-	-	[35]	Ps
5591.670	Sm	8	-	-	-	5583.621	Er	8	-	-	-	5575.86	Hf	6	5	-	Me
5591.61	Xe II	-	-	[50 wh]	Hu	5583.5	Xe	-	-	[10 wh]	Hu	5575.814	W	7	-	-	-
5591.598	Eu	4	-	-	-	5583.33	P II	-	-	[70 I]	Gu	5575.7	bh Zr	12	-	-	L
5591.577	Mo	20	12	-	-	5583.298	Sm	10	-	-	-	5575.615	Ru	5	-	-	-
5591.41	Kr I	-	-	[2]	Me	5583.19	Dy	3 h	-	-	Ks	5575.589	Sm	5	-	-	-
5591.322	Sc I	15	-	-	-	5583.093	Ti	12	-	-	Bh	5575.56	Kr I	-	-	[10]	Me
5591.166	Sm	6	-	-	-	5582.912	Re	2	-	-	-	5575.53	Tb	10	-	-	Ed
5591.16	Se II	-	-	[500]	Bl	5582.77	Te	-	-	[15]	Bl	5575.503	Nd	5	-	-	-
5591.15	Ra I	-	-	[8]	Ra	5582.737	Ce	20	-	-	-	5575.27	Xe I	-	-	[2 h]	Me
5591.15	Ne I	-	-	[8]	Gr	5582.573	Ce	3	-	-	-	5575.186	Mo	20	15	-	-
5591.035	W	5	-	-	-	5582.4	Rn	-	-	[200]	Wa	5574.908	Sm	50	-	-	-
5590.96	Yt I	4	2	-	Me	5581.969	Ca I	20	-	-	12	5574.678	U	3	-	-	-
5590.946	Cb	8	2 h	-	-	5581.93	Xe	-	-	[5 wh]	Hu	5574.665	Nd	3	-	-	-
5590.84	Er	8	-	-	Ed	5581.878	Sm	3	-	-	-	5574.664	Sm	15	2	-	-
5590.732	Co I	500	-	-	-	5581.868	Yt I	100	10	-	-	5574.426	Cr	8	-	-	-
5590.73	Hf II	3	5	-	Me	5581.858	Er	8	-	-	-	5574.347	Sm	5	1	-	-
5590.525	Ce	6	-	-	-	5581.83	A I	-	-	[60]	Ms	5574.20	A I	-	-	[5]	Ms
5590.27	I	-	-	[5]	Ke	5581.784	Xe I	-	-	[50]	IME	5573.96	Ho	12	-	-	Ed
5590.110	Ca I	15	10	-	-	5581.76	Ti	-	-	[3]	EI	5573.939	Sm	4	-	-	-
5589.94	Tm	5	20	-	Me	5581.7	bh Zr	20	-	-	L	5573.680	Mn	10	-	-	-
5589.93	Br	2	-	[250]	Bl	5581.610	U	12	5	-	-	5573.612	U	4	-	-	-
5589.919	Nd	4	-	-	-	5581.601	Nd	3	-	-	-	5573.485	Re	30 w	-	-	-
5589.919	Sm	4	-	-	-	5581.599	Gd	7	-	-	-	5573.430	Sm	80	-	-	-
5589.718	Ti	10	-	-	-	5581.401	Ti	25 h	-	-	Bh	5573.355	Th	10	1	-	-
5589.43	Sn II	7	8	-	Ar	5581.375	Ta	12	-	-	-	5573.13	Kr I	-	-	[2]	Me
5589.384	Ni I	20	-	-	-	5581.36	Tm	5	-	-	Me	5573.117	Ti	7	-	-	Bh
5589.378	Ne I	-	-	[50]	Ps	5581.230	U	10	4	-	-	5573.105	Fe I	8	-	-	-
5588.935	Gd	8	-	-	-	5581.097	Yt I	2	-	-	-	5573.013	Mn	10	-	-	-
5588.92	Sn II	2 h	-	[50]	Mo	5580.95	A	-	-	[2]	Ms	5572.849	Fe I	300	25	-	S
5588.8	bh La	2	-	-	Me	5580.819	U	8	3	-	-	5572.649	Eu	4	-	-	-
5588.764	Th	10	-	-	-	5580.810	Yb	3	30	-	-	5572.55	Yb	1	6	-	Me
5588.748	Ca I	35	25	-	-	5580.794	Re	2	-	-	-	5572.548	A I	-	-	[500]	IME
5588.69	A I	-	-	[500]	Ms	5580.659	Os	8	-	-	-	5572.526	Gd	10	-	-	-
5588.473	Yb	30	100	-	-	5580.46	Te	-	-	[8]	Bl	5572.48	Tb	10	-	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5572.477	Th	6	1	-	5564.2	bh Cr	7	-	L	5556.520	Ru I	10	-	-
5572.46	Er	8	-	Ed	5564.187	U	40	3	-	5556.476	Yb	1500	50	-
5572.19	Xe	-	[50]	Hu	5564.143	Re	15	-	-	5556.450	Sr	4	-	-
5572.189	Co	8	-	-	5564.046	Mo	20	10	-	5556.44	Yt I	5	-	Me
5572.007	W	5	-	-	5563.983	W	8	-	-	5556.382	Sm	5	-	-
5572.00	Cb	-	2 wh	Me	5563.84	N	-	[30 h]	Mt	5556.30	Tb	25	-	Ed
5571.96	Tb	10	-	Ed	5563.681	U	2	-	-	5556.282	Mo	30	15	-
5571.841	Pr	10	-	-	5563.604	Fe I	100	5	Bb	5556.254	Ce	35	-	-
5571.436	Cb	5	3 h	-	5563.50	Xe I	-	[2]	Me	5556.21	Sb	6	-	Wt
5571.238	So I	3	-	-	5563.367	Mo	10	2	-	5556.1	bh Zr	5	-	L
5571.200	Th	8	1	-	5563.212	Re	150 w	-	-	5556.045	In II	-	[100]	Ps
5571.0	Hg II	-	[4]	Ps	5563.11	Er	8	-	Ed	5556.01	S II	-	[5]	Ig
5570.922	Ce	4	-	-	5563.047	Ne I	-	[75]	Ps	5555.993	Sb II	-	[2]	Lg
5570.72	Tb	15	-	Ed	5563.028	Ce	10	-	-	5555.981	Zr	2	-	-
5570.683	U	15	15	-	5563.019	Cs II	-	[125]	Sv	5555.85	Ra I	-	[500]	Rs
5570.603	Sm	5	-	-	5563.000	Cb	10	3	-	5555.85	Er	8	-	Ed
5570.509	Ti	8	-	Bh	5562.91	Tb	10	-	Ed	5555.769	U	1	2 h	-
5570.49	Ca	-	2	Ad	5562.90	Sn II	-	5	Ar	5555.765	Nd	5	-	-
5570.450	Mo	200	100	-	5562.845	Sm	3	-	-	5555.607	In II	-	[15]	Ps
5570.386	La I	5	-	-	5562.769	Ne I	-	[500]	IMe	5555.432	In II	-	[70]	Ps
5570.359	Eu	1000	-	-	5562.709	Fe I	15 h	-	-	5555.389	Zr I	3	-	-
5570.2895	Kr I	-	[2000]	S	5562.7	bh Zr	2	-	L	5555.315	W	6	-	-
5570.247	Pr	2 w	-	-	5562.694	Pd I	2	-	-	5555.140	In II	-	[30]	Ps
5569.956	Nd	4	2	-	5562.6	bh La	5	-	Me	5555.08	Rh I	2	-	-
5569.625	Fe I	300	15	S	5562.49	Mo	3	3	-	5554.99	Xe	-	[2 h]	Hu
5569.476	Mo	15	10	-	5562.462	Dy	3	-	-	5554.95	Tb	25	-	Ed
5569.38	Te	-	[15]	Bl	5562.441	Ne I	-	[150]	Ps	5554.946	In II	-	[30]	Pa
5569.294	Ce	3	-	-	5562.2257	Kr I	-	[500]	S	5554.94	Cu I	5	-	Sh
5569.278	Sm	4	-	-	5562.119	W	8	-	-	5554.94	O I	-	[100 h]	Pa
5569.179	Tb	10	-	-	5562.09	Yb	6	2	-	5554.887	Fe I	100	-	-
5569.17	Cl	-	[4]	Ks	5562.055	Pr	15 w	-	-	5554.737	Sm	5	-	-
5569.033	Ru I	12	-	-	5562.022	U	2 h	1	-	5554.42	Tb	25	-	Ed
5568.81	Cl II	-	[15]	Ks	5561.95	Sn II	-	[40]	Mc	5554.281	Cr	3 a	-	-
5568.65	Kr II	-	[100]	Me	5561.657	V I	15	15	-	5554.115	W	6	-	-
5568.620	Mo	30	15	-	5561.459	Pr	3	1	-	5554.07	A	-	[5]	Rt
5568.507	U	3	-	-	5561.378	Sm	20	-	-	5553.693	Ni I	8	-	-
5568.474	La I	40	-	-	5561.168	Nd	10	-	-	5553.595	So I	5	-	-
5568.31	Rh I	2	-	Me	5561.161	Sm	2	-	-	5553.585	Fe I	6	-	-
5568.290	Cr	3	-	-	5561.10	Sc I	3	-	Me	5553.57	Ra I	-	[250]	Rs
5568.121	Yb	20	1	-	5560.94	Ho	20	-	Ed	5553.40	Tb	10	-	Ed
5568.10	I II	-	[2]	Mu	5560.690	Gd	20	-	-	5553.40	A I	-	[2]	Ms
5568.09	Sb II	6	200 wh	Wt	5560.622	Os	7	-	-	5553.399	Pr	5 d	-	-
5568.066	W	15	-	-	5560.548	V I	3	1	-	5553.33	Nd	2	-	-
5567.959	U	12	2	-	5560.54	Se II	-	[8]	Bl	5553.328	Ti	15	-	Bh
5567.812	Ce	12	-	-	5560.4	bh La	8	-	Me	5553.16	Er	12	-	Ed
5567.77	Xe I	-	[2 h]	Me	5560.37	N I	-	[200]	Du	5553.14	Ho	30	-	Ed
5567.762	Mn	12	-	-	5560.223	Fe I	5 h	-	-	5553.122	Cb	3	1	-
5567.752	Yt I	5	2	-	5560.22	A I	-	[10]	Ms	5553.10	Xe I	-	[3 h]	Me
5567.63	N	-	[5]	Mt	5560.179	Pt	2	-	-	5553.1	bh Zr	60	-	L
5567.399	Fe I	30	-	-	5560.015	Th	6	-	-	5553.015	Sm	3	-	-
5567.343	U	2	1	-	5559.899	Th	6	-	-	5552.99	Kr II	-	[100 whs]	Me
5567.0	Sb II	-	40	Dv	5559.767	W	8	-	-	5552.883	Os	12	-	-
5566.943	La II	8	20	-	5559.749	Ru I	60	-	-	5552.863	Nd	8	-	-
5566.93	Se II	3	[500]	Bl	5559.726	Gd	8	-	-	5552.76	A I	-	[10]	Ms
5566.915	Pr	3	1	-	5559.62	A I	-	[200]	Ms	5552.63	P	-	[15]	Gu
5566.9	bh Zr	5	-	L	5559.26	Kr I	-	[2]	Rs	5552.619	U	4	3	-
5566.894	Eu	4	-	-	5559.223	Ce	15	-	-	5552.45	Mn	4	-	-
5566.7	Cs	-	[40]	Dr	5559.087	Ne I	-	[35]	Ps	5552.385	Xe I	-	[80]	IMe
5566.663	Mo	3	3	-	5559.006	Nd	5	-	-	5552.35	Bl	500 whl	100 l	Wt
5566.615	Xe I	-	[100]	IMe	5558.965	W	2	-	-	5552.296	Ca	6	-	-
5566.52	Ho	100	-	Ed	5558.91	S II	-	[5]	Ig	5552.25	So II	-	4	Me
5566.499	Ce	4	-	-	5558.825	Co	5	-	-	5552.207	Gd	2	-	-
5566.410	Eu	4	-	-	5558.755	W	2	-	-	5552.188	Mo	12	3	-
5566.22	Xe	-	[5 h]	Me	5558.749	V I	18	18	-	5552.12	Hf	40	5	Me
5565.999	Tm	8	-	-	5558.702	A I	-	[500]	IMe	5551.985	Mn	10	-	-
5565.970	Ce	35	-	-	5558.658	Ce	6	-	-	5551.95	N II	-	[30]	Fl
5565.96	A I	-	[5]	Ms	5558.630	Sm	2	-	-	5551.7	bh Zr	60	-	-
5565.934	Tb	25	-	-	5558.341	Th	10	-	-	5551.651	I II	-	[15]	Ke
5565.727	La I	10	-	-	5558.31	As II	-	200	Ro	5551.50	Er	8	-	Ed
5565.708	Nd	3	-	-	5557.920	Zr I	3 h	-	-	5551.50	Xe	-	[2 whs]	Hu
5565.702	Fe I	70	-	-	5557.904	Al I	15	-	-	5551.5	bh B	8	-	L
5565.618	Sm	2	-	-	5557.895	U	10	1	-	5551.454	Sm	3	-	-
5565.57	Te	-	[8]	Bl	5557.62	Nd	4	-	Kn	5551.441	U	8	5	-
5565.56	Hf II	2	5	Me	5557.44	N	-	[10]	Du	5551.409	Ce	8	-	-
5565.535	Pr	9 w	-	-	5557.313	Th	8	-	-	5551.368	Th	10	-	-
5565.488	Ti I	80	2	-	5557.28	Xe I	-	[2]	Me	5551.347	Cb	30	10	-
5565.452	La I	20	-	-	5557.214	Re	15	-	-	5551.258	U	2	1	-
5564.999	Th	4	-	-	5557.18	Rh I	2	-	-	5551.020	W	5	-	-
5564.960	Ce	40	-	-	5557.134	Os	5	-	-	5550.965	Ti	10	-	-
5564.93	S	-	[150]	Bl	5557.02	Al I	15	-	Wt	5550.60	Hf	30	5	Me
5564.861	So I	5	-	-	5556.945	Ce	8	-	-	5550.40	So I	2 h	-	Me
5564.628	Ti	8	-	Bh	5556.802	Rh	3	-	-	5550.399	Sm	125	-	-
5564.37	N I	-	[200]	Du	5556.769	Ru	6	-	-	5550.368	Zr I	3 h	-	-
5564.236	Ce	10	-	-	5556.723	Mo	20	12	-	5550.331	W	8	-	-
5564.204	Th	12 d	3	-	5556.59	Er	8	-	Ed	5550.216	Gd	8	-	-

5550.0—5529.0 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5550.092	Nd	10	1	—	5542.73	A I	—	[2]	Ms	5536.0	C II	—	5 h	En
5550.038	Ce	6 w	—	—	5542.713	Ce	5	—	—	5535.940	In II	—	[70]	Pa
5549.95	Fe	8 h	—	—	5542.650	Sm	10	—	—	5535.796	U	6	2	—
5549.79	Hg I	—	[15]	Wd	5542.541	Eu	80	—	—	5535.671	La II	50	100	—
5549.68	Sc I	3	—	Me	5542.404	W	4	—	—	5535.551	Ba I	1000 R	200 R	—
5549.607	Cb	5	—	—	5542.187	Dy	3	—	—	5535.504	Sm	3	—	—
5549.311	Ta	4	—	—	5542.064	Hn I	2	—	—	5535.476	Nd	3	—	—
5548.971	Tb	10	—	—	5541.874	Ti	15	—	Bh	5535.411	Fe	50	—	—
5548.966	W	2	1	—	5541.791	Nd	5	—	—	5535.39	N II	—	[70]	Fl
5548.954	Sm	80	—	—	5541.65	Kr II	—	[4 whs]	Me	5535.382	V I	2	2	Me
5548.817	Ce	25	—	—	5541.647	Mo	12	5	—	5535.38	Tb	15	—	Ed
5548.76	Os	3	—	—	5541.632	Yt I	2	—	—	5535.271	Nd	2	—	—
5548.75	U	2	1	—	5541.596	Eu	6	—	—	5535.240	Ce	15	—	—
5548.706	Nd	5	—	—	5541.468	Cb	5	2	—	5535.176	Pr	10	2	—
5548.474	Nd	10	1	—	5541.46	A I	—	[2]	Ms	5535.16	Gd	8	—	Ks
5548.325	Ta	60	—	—	5541.346	Sm II	10	—	—	5535.04	Rh	80	1	—
5548.312	Pr	3	1	—	5541.258	La I	50 W	—	—	5534.98	Cu II	—	3	Sh
5548.201	Gd	8	—	—	5541.18	P II	—	[50]	Gu	5534.860	Fe II	—	10	Do
5548.165	Th	15 s	—	—	5541.030	Sc I	3	—	—	5534.807	Sr	20	15	—
5548.158	V	8 W	10 h	—	5540.90	A I	—	[40]	Ms	5534.66	Fe I	20	—	—
5548.081	W	6	2	—	5540.73	Er	8	—	Ed	5534.58	Tb	10	—	Ed
5548.063	U	6	4	—	5540.723	Pr	3 w	—	—	5534.548	Gd	8	—	—
5547.69	Tb	10	—	Ed	5540.7	bh C	—	—	L	5534.542	Mo	5	4	—
5547.678	Nd	2	—	—	5540.662	Ru	12	—	—	5534.45	A I	—	[60]	Ms
5547.56	La	2 h	4 h	Me	5540.612	Ir	2	—	—	5534.291	Gd	8	—	—
5547.446	Eu	1000	—	—	5540.578	Ce	8	—	—	5534.2	bh La	8	—	Me
5547.4	bh Zr	2	—	L	5540.44	In	—	5	Sq	5533.84	Rh I	3	—	—
5547.29	Ho	8	—	Ed	5540.38	Xe I	—	[3 h]	Me	5533.840	Nd	10	—	—
5547.275	Dy	8	—	—	5540.36	N	—	[5]	Du	5533.838	V I	18	—	—
5547.188	Yb	2	15	—	5540.2	Bi II	—	20	MI	5533.678	Ne I	—	[75]	Ps
5547.120	Ne I	—	[8]	Ps	5540.187	U	2	1	—	5533.64	Er	8	—	Ed
5547.067	V I	40	40	—	5540.16	N II	—	[5]	Fl	5533.396	Nd	15	—	—
5547.04	Tb	10	—	Ed	5540.052	Sr	20	30	—	5533.33	Gd	8	—	Ks
5547.020	Pd I	50	2	—	5539.901	Th	18 d	4	—	5533.284	Ti	6	—	—
5546.979	Nd	2	—	—	5539.817	Gd	12	—	—	5533.26	W	25	—	Me
5546.968	Co I	4	—	—	5539.489	W	10	—	—	5533.244	Eu	30	—	—
5546.819	Os	8	—	—	5539.410	Mo	25	12	—	5533.20	P	—	[15]	Gu
5546.521	W	3 l	—	—	5539.4	bh Zr	20	—	L	5533.129	Th	5	—	—
5546.490	Fe I	40	—	—	5539.28	Fe	30	—	—	5533.046	Mo	200	100	—
5546.419	Cb	1	10	—	5539.26	Nd	10	—	—	5532.981	Ti	10	—	—
5546.36	I I	—	[2]	Mu	5539.259	Th	12	—	—	5532.971	Nd	10 h	—	—
5546.148	Ba	3 wh	—	—	5539.064	Yb	200	5	—	5532.813	Sm	2	—	—
5546.117	Th	8	—	—	5538.96	Tb	10	—	Ed	5532.78	Xe I	—	[2 h]	Me
5546.111	U	3	1	—	5538.806	Nd	5	—	—	5532.749	Fe I	4	—	—
5546.11	Kr II	—	[5 wh]	Me	5538.8	bh Zr	12	—	L	5532.663	Re	100	—	—
5546.10	Tb	15	—	Ed	5538.767	Pr	3	1	—	5532.605	Sm	3	—	—
5546.007	Yt II	6	10	—	5538.738	Ti	10	—	—	5532.597	Cb	3	1	—
5545.94	Ag I	30 l	—	Bx	5538.690	W	4	—	—	5532.35	Er	8	—	Ed
5545.931	V I	12	12	—	5538.641	Ne I	—	[50]	Ps	5532.300	Zr I	3	—	—
5545.930	Co I	25 h	—	—	5538.57	Fe	50	—	—	5532.29	Kr II	—	[5]	Me
5545.910	Nd	4	—	—	5538.530	U	6	5	—	5532.17	La I	2	10	Me
5545.623	Cb	2 h	10 h	—	5538.395	Sm	2	—	—	5532.16	Cl I	—	[6]	Ks
5545.320	Zr I	5	—	—	5538.373	Pr	10	—	—	5532.11	Tb	15	—	Ed
5545.2	bh Zr	20	—	L	5538.333	Gd	20	—	—	5532.087	Nd	15	—	—
5545.140	Ta	4 l	—	—	5538.26	Hf	3	—	Me	5532.059	La	3	—	—
5545.11	N I	—	[20]	Mt	5538.02	Hf	4	1	Me	5532.037	Ce	3	—	—
5545.1	Pb	—	8	Kl	5537.821	Ru	5	—	—	5532.0	Na I	15	—	Fl
5545.08	A	—	[2]	Rt	5537.768	Nd	2	—	—	5531.89	Sb II	4	[5]	Wt
5545.008	Pr	5	1	—	5537.756	Mn	40	—	—	5531.735	Mo	5 h	2 h	—
5544.999	Gd	12	—	—	5537.742	W	12	—	—	5531.523	W	18	—	—
5544.907	La I	5	—	—	5537.535	Ce	10	—	—	5531.282	U	5	—	—
5544.865	V I	5	3	—	5537.518	Ti	15	—	—	5531.153	Pr	20 W	—	—
5544.848	Nd	2	—	—	5537.417	Zr I	5	—	—	5531.07	Xe II	—	[300]	Hu
5544.822	U	8	3 h	—	5537.39	A	—	[2]	Rt	5530.993	Ru	5	—	—
5544.653	Ce	10	—	—	5537.324	Ti	10	—	—	5530.769	Co I	500	—	—
5544.615	Yt II	10	80	—	5537.299	W	8	—	—	5530.713	U	3	1	—
5544.6	Pb II	—	[40]	Ea	5537.279	Nd	3	—	—	5530.689	Th	8	—	—
5544.585	Rh I	50	1	—	5537.274	Tm	3	—	—	5530.57	Ho	8	—	Ed
5544.49	P	—	[50]	Gu	5537.127	Th	10	1	—	5530.556	Dy	3	—	Bh
5544.489	Mo	20	12	—	5537.071	Sm II	50	—	—	5530.494	Ti	30	—	—
5544.25	Ra	—	[15]	Rs	5537.032	In II	—	[50]	Ps	5530.485	Nd	3	—	—
5544.140	Ti	10	—	Bh	5536.83	Eu	3	—	Kn	5530.42	Ho	8	—	Ed
5543.980	Ti	7	—	Bh	5536.736	Ta	2 h	—	—	5530.30	Tb	10	—	Ed
5543.928	Fe I	10	—	—	5536.73	Te	—	[25]	Bl	5530.29	Hf	2	—	Me
5543.603	Sm	2	—	—	5536.683	Zr	2	—	—	5530.27	N II	—	[50]	Fl
5543.49	N II	—	[30]	Fl	5536.553	In II	—	[70]	Ps	5530.193	Pr	4	1	—
5543.48	Cu II	—	2	Sh	5536.444	Nd	2	—	—	5530.16	In II	—	[12]	Ps
5543.357	Sr I	30	5	—	5536.40	Br I	—	[20]	Ks	5530.12	Se I	—	[8]	Rd
5543.241	Nd	20	—	—	5536.4	bh La	10	—	Me	5529.954	Sr	5	—	—
5543.183	Fe	25	—	—	5536.30	Br	—	[50]	Bl	5529.95	Yb	—	8 h	Me
5543.121	Mo	20	15	—	5536.273	Tb	25	—	—	5529.882	La I	5	—	—
5542.960	W	4	—	—	5536.26	Er	8	—	Ed	5529.80	Er	8	—	Ed
5542.897	Th	5	—	—	5536.198	Sm	2	—	—	5529.455	Pd I	10	—	—
5542.799	Pd I	100	2	—	5536.13	Eu	30	—	Kn	5529.286	Mo	3 h	2 h	—
5542.733	Sm	2	—	—	5536.01	K II	—	[10]	Bn	5529.09	Yb	1	9	Me

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5529.069	Nd	10	-	-	5522.165	Nd	10	-	-	5514.842	W	2 h	-	-
5528.97	Br	-	[15]	Bl	5522.047	I	-	[35]	Ke	5514.77	P	-	[30]	Gu
5528.93	A I	-	[40]	Ms	5521.884	Cb	5 h	1	-	5514.752	Nd	2	-	-
5528.743	In II	-	[15]	Ps	5521.83	Sr	50	10	Fl	5514.73	Er	12	-	Ed
5528.63	Kr I	-	[2]	Me	5521.77	Th	4	-	-	5514.71	Cl	-	[4]	Ks
5528.495	W	7	-	-	5521.71	Gd	8	-	Ks	5514.698	W	50 w	8	-
5528.461	Mg I	60	30	-	5521.70	Yt II	4	40	Me	5514.631	Fe	50	10	-
5528.412	Zr I	7	-	-	5521.68	Pt	4	-	-	5514.56	Gd	8	-	Ks
5528.359	Ta	15	-	-	5521.637	Sm	3	-	-	5514.542	Ti I	80	15	-
5528.342	Tm	3	2	-	5521.628	Yt I	5	-	-	5514.54	Tb	50	-	Ed
5528.333	Nd	20	-	-	5521.170	Mo	3	2	-	5514.45	In	-	5	Sq
5528.218	Th	2	-	-	5521.17	Kr I	-	[3]	Me	5514.45	A	-	[2]	Rt
5528.111	W	3	-	-	5521.154	Ta	4	-	-	5514.346	Ti I	70	10	-
5528.03	Dy	3	-	Ks	5521.104	Re	20	-	-	5514.215	Sc I	60	-	-
5528.003	Th	4	-	-	5521.043	U	6	-	-	5514.096	Pt	15	-	-
5527.90	Ti I	30	-	Fl	5521.008	W	10	-	-	5513.929	Sm	2	-	-
5527.895	Ce	5	-	-	5520.645	Mo	20	12	-	5513.808	Mo	3	1	-
5527.876	Pr	5 w	-	-	5520.63	Ne I	-	[3]	Gr	5513.76	Gd	4	-	Ks
5527.848	U	25	40	-	5520.602	Nd	15	-	-	5513.607	Yt I	6	-	-
5527.769	Yt I	10	-	-	5520.53	Rn I	-	[5]	Rs	5513.583	Pr	10	2	-
5527.606	Ti I	8	-	-	5520.52	Kr I	-	[40]	Me	5513.507	Ta	2	-	-
5527.540	Yt I	100	15	-	5520.496	Sc I	80	-	-	5513.40	Er	8	-	Ed
5527.176	Ce	10	-	-	5520.42	S	-	[15]	Bl	5513.386	U	5 h	1	-
5526.98	Rn I	-	[15]	Rs	5520.300	Pr	4 w	-	-	5513.209	Sm	2	-	-
5526.968	Mo	25	15	-	5520.24	Yb	-	4 h	Me	5513.208	In II	-	[15]	Ps
5526.94	Tb	10	-	Ed	5520.06	Re	15 h	-	-	5513.156	In II	-	[30]	Ps
5526.850	Ce	5	-	-	5520.038	Mo	20	12	-	5513.113	Ce	4	-	-
5526.809	Sc II	100	300 wh	-	5520.034	Nd	2	-	-	5513.098	In II	-	[50]	Ps
5526.803	Yt I	2	-	-	5519.90	Tb	10	-	Ed	5513.060	In II	-	[70]	Ps
5526.661	W	3	-	-	5519.636	Eu	3	-	Kn	5513.00	Cl I	-	[4]	Ks
5526.620	Eu	60	-	-	5519.622	Sm	7	-	-	5512.998	In II	-	[70]	Ps
5526.569	Pr	5 w	-	-	5519.6	bh Zr	5	-	L	5512.963	Sm	2	-	-
5526.525	Mo	25	20	-	5519.520	Re	3 h	-	-	5512.955	Ca I	4	5 d	-
5526.354	U	2	-	-	5519.359	In II	-	[500]	Ps	5512.916	In II	-	[100]	Ps
5526.26	N II	-	[15]	Fl	5519.354	Nd	5	-	-	5512.824	In II	-	[150]	Ps
5526.20	S	-	[15]	Bl	5519.253	In II	-	[15]	Ps	5512.816	Cb	20	3	-
5526.143	Nd	5	-	-	5519.164	W	7	-	-	5512.70	O I	-	[70 h]	Ps
5526.135	Sm	2	-	-	5519.115	Ba I	200 wh	60	Sz	5512.69	K II	-	[5]	Bn
5525.97	In II	-	[15]	Ps	5518.988	Th	4	-	-	5512.566	Rb	-	30	Rr
5525.900	Pr	4 d	-	-	5518.91	Ta	100 W	-	Ks	5512.527	Ti I	125	12	-
5525.846	Pt	18	-	-	5518.868	Sm	4	-	-	5512.50	Tb	15	-	Ed
5525.833	I	-	[25]	Ke	5518.8	bh Mg	3	-	L	5512.371	Ru	6	-	-
5525.721	Nd	20	-	-	5518.790	W	4	-	-	5512.101	Sm	80	-	-
5525.71	I	-	[15]	Bl	5518.77	Tb	10	-	Ed	5512.085	Ce	50 s	-	-
5525.62	Tb	25	-	Ed	5518.75	Er	12	-	Ed	5511.947	Nd	5	-	-
5525.59	Xe II	-	[25]	Hu	5518.74	S	-	[15]	Bl	5511.787	Eu	4	-	-
5525.572	Sm	5	-	-	5518.685	Nd	10	-	-	5511.784	Ti I	18	-	-
5525.553	Fe I	40	2	-	5518.56	Xe II	-	[3]	Hu	5511.689	Ce	4	-	-
5525.5	Bi II	2	4	MI	5518.491	Ce	12	-	-	5511.656	Pr	8 w	-	-
5524.979	Co I	25 w	-	-	5518.392	Nd	5	-	-	5511.501	U	30	2	-
5524.93	A I	-	[300]	Ms	5518.207	Ti	6	-	-	5511.490	Mo	15	4	-
5524.615	Th	8 w	-	-	5518.20	A I	-	[5]	Ms	5511.485	Ne I	-	[15]	Ps
5524.57	Gd	10	-	Ks	5518.161	U	2	-	-	5511.46	Sn	-	5	Ar
5524.554	Yb	10	-	-	5518.12	Er	12	-	Ed	5511.375	Sm	3	1	-
5524.35	Hf II	40	50	Me	5518.048	Zr I	2	-	-	5511.21	Cb	3	-	-
5524.212	Th	8	-	-	5517.727	Ta	2 s	-	-	5511.181	V I	25	25	-
5524.141	Pr	10 W	-	-	5517.429	Mo	8	1	-	5511.176	Ne I	-	[3]	Ps
5524.12	Tb	40	-	Ed	5517.395	Ce	10	-	-	5511.098	U	3	1	-
5523.982	Ta	2 s	-	-	5517.388	Cb	3	1	-	5511.096	Sm	8	-	-
5523.938	Nd	5	-	-	5517.342	La I	30	-	-	5511.091	Eu	6	-	-
5523.915	In II	-	[100]	Ps	5517.107	Zr I	4	-	-	5510.974	In II	-	[15]	Ps
5523.869	Zr	2	-	-	5517.08	P	-	[30]	Gu	5510.90	Br	-	[5]	Bl
5523.861	In II	-	[70]	Ps	5516.82	Er	8	-	Ed	5510.881	In II	-	[70]	Ps
5523.70	A I	-	[5]	Ms	5516.771	Mn	50	-	-	5510.800	In II	-	[30]	Ps
5523.613	In II	-	[50]	Ps	5516.66	Kr I	-	[20]	Me	5510.789	Sm	3	-	-
5523.569	Cb	30	10	-	5516.45	Ho	12	-	Ed	5510.772	In II	-	[15]	Ps
5523.531	Os	100	-	-	5516.3	bh V	2	-	L	5510.714	Ru	100	-	-
5523.5	Pb I	-	25	Ro	5516.291	Nd	10	-	-	5510.682	Ce	10	-	-
5523.47	Kr II	-	[30]	Me	5516.275	Ta	2	-	-	5510.68	Cb	3 h	1	-
5523.44	Tb	10	-	Ed	5516.24	Tb	50	-	Ed	5510.678	Th	5	-	-
5523.395	Re	10 w	-	-	5516.21	Gd	10	-	Ed	5510.547	Eu	300 s	-	-
5523.310	Sm	2	-	-	5516.145	Sm	200	-	-	5510.435	U	10	-	-
5523.292	Co I	300 w	-	-	5516.081	Ce	6	-	-	5510.34	La I	200	-	Me
5523.287	In II	-	[50]	Ps	5516.011	Os	7	-	-	5510.2	bh La	8	-	Me
5523.16	Er	8	-	Ed	5516.008	Nd	10	-	-	5510.12	Hf	3	-	Me
5523.001	In II	-	[50]	Ps	5516.005	Er	8	-	-	5510.114	Sm	2	-	-
5522.994	Ce	100	-	-	5515.982	Co I	3 h	-	-	5510.001	Ni I	20	-	-
5522.94	Kr II	-	[60]	Me	5515.674	Nd	2	-	-	5509.989	Th	10	-	-
5522.804	Pr	15 w	1	-	5515.63	Gd	6	-	Ks	5509.927	Cr	6	-	-
5522.789	Rb II	-	100	Rr	5515.402	Dy	3	-	-	5509.896	Yt II	30	40	-
5522.579	In II	-	[15]	Ps	5515.3	bh Zr	20	-	L	5509.67	S II	-	[25]	Ig
5522.461	Fe I	8	-	-	5515.280	La I	15	-	-	5509.662	Sm II	40	-	Ed
5522.459	Ce	15	-	-	5515.110	Pr	5	1	-	5509.61	Tb	25	-	-
5522.42	Se II	-	[750]	Bl	5514.96	Hf II	1	3	Me	5509.330	Os	15	-	-
5522.30	Tb	15	-	Ed	5514.82	Th	5	-	-	5509.20	Xe	-	[10 Wh]	Hu

5509.1—5488.5 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5509.146	Pr	50	2	-	-	5501.938	Th	10	-	-	-	5495.61	Yt I	2	-	-	Me
5509.132	Nd	10	-	-	-	5501.919	Re	10	-	-	-	5495.591	Sm	2	-	-	-
5509.122	Cb	5	2 h	-	-	5501.9	bh C	-	-	-	L	5495.57	Re	2 h	-	-	Me
5508.9	Bi	2	-	-	Ed	5501.874	Mo	20	10	-	-	5495.410	Ti	8	-	-	-
5508.781	Pr	7	2	-	-	5501.747	Cb	3	2	-	-	5495.282	W	4	-	-	-
5508.632	W	8	-	-	-	5501.743	Sm	2	-	-	-	5495.173	Ir I	5	-	-	-
5508.620	V I	5	5	-	-	5501.61	Er	8	-	-	Ed	5495.170	Eu	125	-	-	-
5508.493	W	4	-	-	-	5501.544	Mo	20	15	-	-	5495.07	Xe	-	-	-	[10 Whl] Hu
5508.4	bh La	10	-	-	Me	5501.54	S I	-	[15]	-	Ms	5495.06	Br	-	-	-	[150] Bl
5508.398	Nd	15	-	-	-	5501.486	U	4 h	2	-	-	5494.890	Ni I	5	-	-	-
5508.38	Br	-	[5]	-	Bl	5501.470	Nd	20	-	-	-	5494.776	Ta	50	-	-	-
5508.243	Mo	20	-	-	-	5501.469	Fe I	150	-	-	S	5494.668	U	8 h	1	-	-
5508.212	Cr	6	-	-	-	5501.340	La	200	50	-	-	5494.462	Fe	2	-	-	-
5507.874	Zr	2	-	-	-	5501.017	W	5	-	-	-	5494.407	Ne I	-	[50]	-	Ps
5507.749	V I	60	60	-	-	5501.017	Ru I	6	-	-	-	5494.309	Sm	3	-	-	-
5507.660	Nd	8	-	-	-	5500.892	Sm	3	-	-	-	5494.07	I	-	[15]	-	Ke
5507.63	A I	-	[10]	-	Ms	5500.824	Eu	20	-	-	-	5494.01	Nd	15	1	-	Ks
5507.46	Xe	-	[10]	-	Hu	5500.71	Kr I	-	[50]	-	Me	5493.804	Mo	20 h	12 h	-	-
5507.339	Ne I	-	[25]	-	Ps	5500.702	U	10	-	-	-	5493.719	Sm	80	-	-	-
5507.335	In II	-	[70]	-	Ps	5500.684	Ta	20	-	-	-	5493.511	Fe I	4	-	-	-
5507.33	La I	5	-	-	Kn	5500.60	I I	-	[5]	-	Mu	5493.50	I	-	[20]	-	Ke
5507.194	Nd	2	-	-	-	5500.514	W	15	15	-	-	5493.49	A I	-	[20]	-	Ms
5507.174	Cs	-	[15]	-	Sv	5500.469	Eu	6	-	-	-	5493.452	La II	15	20	-	-
5507.13	P II	-	[70 I]	-	Gu	5500.41	Gd	10	-	-	Ke	5493.38	Gd	8	-	-	Ks
5507.107	In II	-	[30]	-	Ps	5500.38	A	-	[2]	-	Rt	5493.339	Nd	4	-	-	-
5507.01	S I	-	[25]	-	Ms	5500.10	Tb	15	-	-	Ed	5493.22	Hf	-	6	-	Me
5506.822	In II	-	[15]	-	Ps	5499.92	Gd	10	-	-	Ks	5493.18	Yt I	3	-	-	Me
5506.782	Fe I	150	10	-	S	5499.8	Hg II	-	[5]	-	MI	5492.970	U	60	50	-	-
5506.78	Br	-	[300]	-	Bl	5499.71	P II	-	[150]	-	Gu	5492.640	Th	8	-	-	-
5506.713	In II	-	[30]	-	Ps	5499.63	Rn I	-	[5]	-	Rs	5492.593	W	4 h	-	-	-
5506.504	Dy	3	-	-	-	5499.54	Kr II	-	[50]	-	Me	5492.498	Sm	6	2	-	-
5506.491	Mo	200 r	100	-	-	5499.533	Cb	5	1	-	-	5492.368	Pr	4	1	-	-
5506.447	Ce	6	-	-	-	5499.491	Mo	5 h	3 h	-	-	5492.321	W	50	50	-	-
5506.112	A I	-	[500]	-	IMe	5499.442	Ta	60 s	-	-	-	5492.301	Nd	8	-	-	-
5506.090	Ce	6	-	-	-	5499.251	Th	12	-	-	-	5492.166	Mo	15	8	-	-
5506.001	La I	50	-	-	-	5499.00	A I	-	[10]	-	Ms	5492.06	A I	-	[40]	-	Ms
5505.885	Fe I	9 h	-	-	-	5498.86	Yb	20 h	-	-	Me	5491.867	Rh I	5	-	-	-
5505.869	Mn	40	-	-	-	5498.859	Nd	5	-	-	-	5491.81	As	-	12	-	Ro
5505.865	V I	10	10	-	-	5498.78	Se I	-	[8]	-	Rd	5491.72	Er	12	-	-	Ed
5505.67	Er	12	-	-	Ed	5498.68	Gd	8	-	-	Ks	5491.7	bh Zr	20	-	-	-
5505.655	Ta	25	-	-	-	5498.64	Sn	2 h	2	-	Ar	5491.671	Pr	3 h	-	-	L
5505.61	Re	2 h	-	-	-	5498.639	W	10	-	-	Ed	5491.67	Ti	3	-	-	-
5505.501	Yb	40	2	-	-	5498.57	Ho	20	-	-	-	5491.65	Gd	6	-	-	Ks
5505.50	Ra I	-	[25]	-	Rs	5498.494	Mo	20	10	-	-	5491.567	I	-	[100]	-	Ke
5505.184	Sm	4	-	-	-	5498.24	A	-	[5]	-	Rt	5491.539	Yt I	2 h	-	-	-
5505.18	A I	-	[10]	-	Ms	5498.213	Sm	80	-	-	-	5491.43	Kr II	-	[4 h]	-	Me
5505.08	Gd	8	-	-	Ks	5498.194	Ce	15	-	-	-	5491.37	Gd	6	-	-	Ks
5504.978	Nd	10	-	-	-	5498.185	U	3	-	-	-	5491.33	Kr I	-	[2 h]	-	Me
5504.914	Eu	2 h	-	-	-	5498.18	S I	-	[8]	-	Ms	5491.313	Sm	2	-	-	-
5504.873	V I	15	15	-	-	5498.048	In II	-	[30]	-	Ps	5491.28	Os	8	-	-	-
5504.721	I II	-	[60]	-	Ke	5497.98	As II	-	200	-	Ro	5491.236	U	8	6	-	-
5504.652	Rh I	10	-	-	-	5497.909	Eu	4	-	-	-	5491.154	Ce	10	-	-	-
5504.585	Cb	30 w	3 h	-	-	5497.83	Ra	-	[8]	-	Rs	5491.067	La I	10	-	-	-
5504.51	Ho	12	-	-	Ed	5497.661	I II	-	[15]	-	Ke	5491.063	Cb	3	1	-	-
5504.34	Kr I	-	[20]	-	Me	5497.645	In II	-	[50]	-	Ps	5490.94	Kr I	-	[50]	-	Me
5504.305	Th	6	-	-	-	5497.553	In II	-	[70]	-	Ps	5490.845	Ti I	3	-	-	-
5504.21	Mn	7	-	-	-	5497.519	Fe I	150	5	-	S	5490.643	Sm	15	-	-	-
5504.17	Sr	60	25	-	Fl	5497.407	Er	8	-	-	-	5490.58	Gd	4 h	-	-	Ks
5504.146	U	12	10	-	-	5497.40	Yt II	20	40	-	-	5490.563	Pr	4	-	-	-
5504.120	Ni I	2	-	-	-	5497.38	Mn	4	-	-	-	5490.47	Ti II	-	5	-	El
5504.051	Sm	3	-	-	-	5497.377	In II	-	[30]	-	Ps	5490.33	Sb	2	-	-	Wt
5504.02	Kr I	-	[15]	-	Me	5497.30	Hf	3	1	-	Me	5490.3	bh Zr	5	-	-	L
5503.901	Ti I	60	3	-	-	5497.238	Pr	10 W	-	-	-	5490.279	Mo	20	10	-	-
5503.809	La I	100	-	-	-	5497.09	As	-	12	-	Ro	5490.153	Ti	70	2	-	-
5503.78	Er	8	-	-	Ed	5496.97	Rh I	3	-	-	Me	5490.13	A I	-	[60]	-	Ms
5503.704	Nd	3	-	-	-	5496.942	Mo	5 h	5 h	-	-	5490.114	Ta	60	-	-	-
5503.675	U	2	1	-	-	5496.92	I II	-	[900]	-	Ke	5490.101	Sm	3	-	-	-
5503.593	Rh I	5	-	-	-	5496.900	In II	-	[30 h]	-	Ps	5490.03	Eu	3	-	-	Kn
5503.537	Mo	5 h	5 h	-	-	5496.851	Pd I	7	-	-	-	5489.969	W	10	-	-	-
5503.47	Yt I	10	2	-	Me	5496.837	Dy	3	-	-	-	5489.945	V I	18	18	-	-
5503.453	W	45	1	-	-	5496.691	In II	-	[30 h]	-	Ps	5489.649	Co I	150 w	-	-	-
5503.295	In II	-	[15]	-	Ps	5496.687	Ru I	15	-	-	-	5489.398	Mo	3	1	-	-
5503.200	U	2 h	-	-	-	5496.60	I	-	[30]	-	Bl	5489.397	Sm	3	-	-	-
5503.152	In II	-	[30]	-	Ps	5496.444	U	12	1	-	-	5489.134	W	5	-	-	-
5502.88	Al II	-	[15]	-	Sy	5496.418	Nd	10	-	-	-	5488.939	Sm	15	-	-	-
5502.83	P	-	[30 h]	-	Gu	5496.244	W	10	-	-	-	5488.934	Pr	3	-	-	-
5502.802	Er	8	-	-	Ed	5496.21	Kr I	-	[3]	-	Me	5488.921	Th	6	-	-	-
5502.8	bh Zr	5	-	-	L	5496.009	V I	3 h	1 h	-	-	5488.906	U	8	-	-	-
5502.787	Dy	3	-	-	-	5495.95	Ca	2 h	1	-	Ad	5488.86	Kr I	-	[5]	-	Me
5502.669	La I	10	-	-	-	5495.872	A I	-	[1000]	-	IMe	5488.79	Br	-	[70]	-	Bl
5502.628	Sm	4	-	-	-	5495.805	Eu	4	-	-	-	5488.79	Ti I	15	-	-	Fl
5502.299	Eu	2	-	-	-	5455.805	Th	6	-	-	-	5488.671	Mo	3	1	-	-
5502.245	La I	10	-	-	-	5495.70	N II	-	[70]	-	Fl	5488.648	Eu	500	-	-	-
5502.123	Zr I	7	-	-	-	5495.668	Co I	15	-	-	-	5488.622	Th	10	-	-	-
5501.98	Ra I	-	[250]	-	Rs	5495.65	Tb	10	-	-	Ed	5488.555	Xe I	-	[20 h]	-	IMe

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
5488.473	W	5	-	5481.20	Br	-	[15]	5474.38	Zr	2	-
5488.46	A I	-	[2]	5481.162	Ta	7 r	-	5474.227	Ti I	30	50
5488.328	Zr	2	-	5481.157	Zr	2	-	5474.041	Yb	10	-
5488.32	Ra I	-	[25]	5481.13	Xe	-	[2 h]	5473.99	Se	-	[10]
5488.26	Tb	15	-	5481.002	Cb	8	5	5473.927	Sm	4	-
5488.249	Sm	3	-	5481.001	Re	3	-	5473.920	Fe I	100	-
5488.204	Ti I	30	30	5480.893	Ni I	2	-	5473.689	Ba	10	-
5488.18	Gd	3 h	-	5480.888	Th	6	-	5473.688	Sm	3	-
5488.07	Te	-	[50]	5480.873	Fe I	10	-	5473.63	S	-	[750]
5488.06	K II	-	[5]	5480.84	Sr	100 h	30	5473.551	Ti I	8	-
5488.038	Sm	3	-	5480.83	Te	-	[8]	5473.534	Ce	12	-
5487.919	V I	20	20	5480.827	Zr I	4	-	5473.44	A I	-	[500]
5487.785	W	15	-	5480.75	Yt II	10	15	5473.436	Ti	6	-
5487.775	Fe I	10 h	-	5480.739	La II	5	40	5473.40	Yt II	10	20
5487.598	Cb	1	10	5480.661	Sm	4	-	5473.370	Mo	50	25
5487.577	Pr	8	-	5480.637	W	9	-	5473.3	bh C	70	-
5487.521	Zr I	2	-	5480.502	Cr	20	-	5473.292	Sm II	8	-
5487.413	Pr	8	-	5480.30	Ba II	-	[15]	5473.083	Nd	6	-
5487.218	V I	15	15	5480.295	Ru	25	-	5472.90	Si	-	2
5487.138	Fe I	50	5	5480.275	U	15	25	5472.841	Ru I	4	-
5487.03	Xe I	-	[6 h]	5480.18	Gd	7	-	5472.729	Fe I	7	-
5487.026	Nd	2	1	5480.10	N II	-	[30]	5472.699	Ti I	12	-
5487.021	U	12	8	5479.99	Br	-	[30]	5472.686	Sm	4	-
5486.988	V	-	2 h	5479.99	Ho	12	-	5472.66	Tb	10	-
5486.837	La II	2	4	5479.730	Pr	10	-	5472.61	Xe II	-	[500]
5486.6	Bi	4	-	5479.653	U	3	1	5472.4	Pb II	-	[25]
5486.59	Yb	-	4	5479.60	I II	-	[15]	5472.361	Ti	8	-
5486.57	Gd	6	-	5479.404	Ru	40	-	5472.340	W	7	-
5486.47	A I	-	[20]	5479.261	W	6	1 h	5472.328	Eu	1000 s	-
5486.12	Sr	40	8	5479.14	Sn	-	2	5472.297	Ce	25	-
5486.089	Zr I	4	-	5479.13	Te	-	[50]	5472.215	Ta	2 h	-
5486.009	W	20	-	5478.677	W	5	-	5472.19	Sc I	10	-
5485.93	Er	30	-	5478.61	Nd	15	-	5471.951	Pr	3	-
5485.7	bh Zr	20	-	5478.598	Ce	12	-	5471.95	Ho	8	-
5485.699	Nd	20	3	5478.596	Sm	2	-	5471.95	Sb II	-	[15]
5485.528	Pr	4	-	5478.522	Yb	10	50	5471.92	As II	-	15
5485.478	Eu	6	-	5478.495	Pt	50	2	5471.750	Pr	3 w	-
5485.448	Ti	10	-	5478.473	Fe I	2	-	5471.565	Ta	2	-
5485.416	Sm	40	-	5478.326	Zr I	4	-	5471.551	Ag I	500 h	100
5485.28	Ho	8	-	5478.29	Sm II	2	-	5471.506	W	6	-
5485.101	Nd	8	-	5478.28	S	-	[8]	5471.327	V	12 W	12 W
5484.7	Li II	-	[8]	5478.13	N II	-	[15]	5471.208	Ti I	25	25
5484.643	Ru I	10	-	5477.866	U	6	-	5470.852	Rh I	25	1
5484.618	Sc I	60	-	5477.799	W	25	20	5470.638	Mn	50	-
5484.61	Ho	8	-	5477.778	Zr II	2 h	-	5470.53	I I	-	[25]
5484.569	Sm	4	-	5477.74	P	-	[30]	5470.47	Gd	8	-
5484.518	U	4	-	5477.709	Ti I	70	2	5470.457	Co I	50	-
5484.46	Xe I	-	[4 h]	5477.45	Er	20	-	5470.410	Nd	8	-
5484.40	Eu	-	-	5477.395	Zr I	2 h	-	5470.34	Tb	40	-
5484.323	Ru I	60	-	5477.268	Os	30	-	5470.3	bh C	-	-
5484.3	bh La	10	-	5477.24	Dy	3	-	5470.29	Gd	2	-
5484.287	Sm	2	-	5477.077	Co I	40	-	5470.24	I	-	[2]
5484.229	Rh I	15	1	5476.906	Ni I	400 w	8	5470.065	K II	-	[40]
5484.138	Th	12	-	5476.69	Lu	500	1000	5469.998	Os	30	-
5484.108	Ti	12	-	5476.58	Kr I	-	[2]	5469.920	Pr	8	-
5484.08	Se II	-	[20]	5476.578	Fe I	80	-	5469.729	Gd	12	-
5484.001	Nd	3	-	5476.46	Kr II	-	[4 whl]	5469.708	Pr	3	-
5483.962	Co I	150 w	-	5476.295	Fe	12	-	5469.65	A	-	[20]
5483.55	P II	-	[70 l]	5476.29	Gd	4	-	5469.63	Er	12	-
5483.487	Cb	5	2	5476.123	Rh I	10	-	5469.63	Cu II	-	3
5483.343	Co I	500 w	-	5476.069	Cb	3	1	5469.58	Xe II	-	[10 h]
5483.32	A I	-	[10]	5476.038	W	8	-	5469.490	Pt I	7	-
5483.116	Fe I	15	-	5475.9	bh Mg	2	-	5469.404	Ir I	3	-
5483.098	Sm	15 d	3	5475.897	Mo	20	12	5469.399	Nd	2	-
5483.088	Cb	5	1 h	5475.77	Sb II	-	[5]	5469.305	Co I	125	-
5482.89	Br II	-	[15]	5475.766	Pt	60	2	5469.2	bh V	15	-
5482.65	Co II	-	3	5475.725	U	20	18	5469.20	A	-	[2]
5482.548	U	12	18	5475.669	Pr	20 w	1	5469.18	Si	-	2
5482.270	La II	25	50	5475.66	Gd	8	-	5469.110	W	10	-
5482.180	Sm	3	-	5475.544	Ta	40	-	5469.096	Dy	3	-
5482.13	Ra I	-	[100]	5475.183	Sm	10 d	2	5469.041	Gd	8	-
5481.989	Sc I	60	-	5475.164	Ru	5	-	5468.735	Rh I	6	-
5481.97	Gd	7	-	5475.161	La	8	-	5468.47	Yt I	12	-
5481.940	Yb	50	2	5475.15	Er	8	-	5468.46	Ho	20	-
5481.869	Ti I	20	20	5475.13	Os	15	-	5468.40	So I	2	-
5481.852	Os	15	-	5475.114	W	15	-	5468.371	Ce	15	-
5481.843	Eu	2 h	-	5475.06	S	-	[15]	5468.320	Er	8	-
5481.759	Pr	3	-	5474.923	Zr I	2	-	5468.28	Tb	10	-
5481.459	Fe I	5	-	5474.917	Fe	100	-	5468.17	Kr II	-	[200 ha]
5481.45	Tb	10	-	5474.862	Th	10	3	5468.16	I	-	[2]
5481.431	Ti I	35	1	5474.734	Nd	3	2	5468.110	Rh I	15	1
5481.419	Rh I	10	1	5474.65	Tb	10	-	5468.101	Ni I	2	-
5481.396	Mn	60	-	5474.62	U	2	2 h	5468.021	Nd	2	-
5481.252	Fe I	5	-	5474.58	Os	8	-	5467.798	V I	10	10
5481.223	U	30	25	5474.465	Ti I	12	-	5467.551	W	8	-

5467.4—5443.4 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5467.497	Nd	2	-	-	5457.938	W	10	-	-	5451.343	Sc I	5	-	-
5467.208	Sm II	8	-	-	5457.83	Tb	10	-	-	5451.30	Er	8	-	-
5467.13	A I	-	[6]	Ms	5457.8	Hg II	-	[8]	Ps	5451.211	Zr	2 h	-	-
5467.05	Eu	10 W	-	Kn	5457.75	A I	-	[10]	Ms	5451.115	Nd	25	-	-
5466.947	Fe	-	5	Do	5457.651	Fe	18	2	-	5451.02	Tb	10	-	-
5466.927	La I	3	-	-	5457.60	Cb	-	5 wh	Me	5450.90	Xe II	-	[25]	Hu
5466.728	Sm	80	-	-	5457.617	Eu	20	-	-	5450.842	Sr	30	-	-
5466.472	Yt I	150	20	-	5457.595	Zr I	2	-	-	5450.8	Bi	-	7	Om
5466.459	Er	12	-	-	5457.47	Cl II	-	[30]	Ks	5450.65	P II	-	[100 I]	Gu
5466.407	Fe I	25	-	-	5457.471	Mn	25	-	-	5450.513	Mo	30	20	-
5466.23	Br I	-	[150 I]	Ks	5457.37	A I	-	[200]	Ms	5450.45	Xe II	-	[100]	Hu
5466.0	bh Zr	8	-	L	5457.298	Os	25	-	-	5450.42	Tb	10	-	-
5465.9	Cs I	5 wh	-	Fl	5457.211	Ce	12	-	-	5450.16	Tb	10	-	-
5465.690	U	12	8	-	5457.02	Cl II	-	[75]	Ks	5450.06	Br I	-	[30]	Ks
5465.570	Mo	20	5	-	5457.102	V	-	2	Me	5450.052	Sm	2	-	-
5465.533	Tm	10	-	-	5457.07	Cl II	-	[12]	Mu	5450.038	Ce	10	-	-
5465.50	Lu	3	-	Me	5457.064	Pr	3	-	-	5449.82	Te	-	[75]	Bl
5465.487	Ag I	1000 R	500 R	-	5457.06	I	-	[15]	Ke	5449.779	Fe	10	-	-
5465.4	bh Zr	20	-	L	5456.978	Tb	15	-	-	5449.61	Kr II	-	[2 wh]	Me
5465.344	Ce	20	-	-	5456.618	Er	30	-	-	5449.587	Sm	5	-	-
5465.17	Te II	-	[15]	Bl	5456.61	Si	-	2	Sy	5449.500	Ir I	35	2	-
5464.61	I	-	[900]	Ke	5456.6	bh La	10	-	Me	5449.478	Th	12	2	-
5464.462	W	4	-	-	5456.593	Ta	5 h	-	-	5449.37	Os	20	-	-
5464.39	Tb	10	-	Ed	5456.591	W	18	-	-	5449.31	A I	-	[5]	Rs
5464.381	La II	25	30	-	5456.53	Tb	10	-	Ed	5449.286	Yb	20	100	-
5464.279	Fe	6	-	-	5456.5	bh Zr	40	-	L	5449.236	Nd	10	-	-
5464.236	U	5	-	-	5456.459	Mo	20	12	-	5449.224	Ce	25	-	-
5464.20	Ce	5	-	-	5456.45	Xe I	-	[2]	Me	5449.164	Ti I	15	-	-
5464.08	Sb II	-	[100]	Lg	5456.408	Ce	15	-	-	5448.939	W	5	-	-
5464.064	Zr I	2	-	-	5456.394	Sm	5	1	-	5448.903	Ti I	12	-	-
5463.974	Cr	15 s	-	-	5456.39	Kr I	-	[2 h]	Me	5448.818	Mo	1	-	-
5463.795	Sm	2	-	-	5456.31	Re	2 h	-	-	5448.78	I	-	[2]	Bl
5463.6	Sn	2 h	2	Ar	5456.27	Cl II	-	[50]	Ks	5448.77	Ti II	-	[6]	El
5463.38	Hf II	10	10	Me	5456.187	Cb	3 h	1	-	5448.61	A I	-	[10]	Ms
5463.283	Fe I	100	-	-	5456.177	Cl II	-	[6]	Mu	5448.606	Nd	2	-	-
5463.277	Gd	8	-	-	5456.134	Ru I	40	-	-	5448.551	Zr I	4	-	-
5463.167	Sm	2	-	-	5456.01	A I	-	[5]	Ms	5448.548	Mo	3	1	-
5462.969	Fe I	50	-	-	5455.815	Nd	30	-	-	5448.508	Ne I	-	[150]	IMe
5462.65	Kr I	-	[2]	Me	5455.619	Er	8	-	-	5448.374	Fe	2 h	-	-
5462.62	N II	-	[30]	Fl	5455.613	Fe I	300	30	S	5448.310	Cb	5	2 h	-
5462.615	Th	12	2	-	5455.58	Se II	-	[15]	Mz	5448.283	Sm	2	-	-
5462.487	Ni I	20	-	-	5455.448	Dy	4	-	-	5448.23	Er	12	-	-
5462.451	Er	20	-	-	5455.433	Fe I	50	-	Bu	5447.958	Zr	2	2	-
5462.329	Sm	3	-	-	5455.28	Gd	10	-	Ed	5447.915	Re	20	-	-
5462.2	bh Zr	12	-	L	5455.273	Sm	5 d	-	-	5447.86	Kr I	-	[3 h]	Me
5461.96	Tm	5	25	Me	5455.146	La I	200	1	-	5447.76	Os	3	-	-
5461.738	Th	12	1	-	5455.084	Cb	-	4 h	-	5447.735	Gd	12	-	-
5461.6	bh Zr	12	-	L	5455.08	Yb	25	6	Me	5447.648	Sm	2	-	-
5461.537	Sm	8	-	-	5454.816	Ru	100	-	-	5447.59	La II	2	10	Me
5461.290	Ta	80	-	-	5454.814	V	6	4	-	5447.556	Nd	8	-	-
5460.928	Cb	3	1	-	5454.555	Co I	300 w	-	-	5447.38	Sc I	3	-	-
5460.85	P	-	[100]	Gu	5454.499	Ir I	20	-	-	5447.283	Nd	12	-	-
5460.740	Hg I	-	[2000]	Cn	5454.49	I II	-	[2]	Mu	5447.157	Eu	5	-	-
5460.73	Zr I	2 h	-	-	5454.41	A	-	[10]	Rt	5447.09	P	-	[15]	Gu
5460.70	Br	-	[10 I]	Ks	5454.268	Er	30	-	-	5446.920	Fe I	300	35	S
5460.63	Re	30 W	-	-	5454.26	N II	-	[15]	Fl	5446.85	Ti II	-	[3]	El
5460.529	Ti I	20	15 h	-	5454.016	Yb	5	-	-	5446.753	Ir I	4	-	-
5460.507	Ti I	30	-	-	5453.950	Ce	12	-	-	5446.637	Ti I	15	30	-
5460.39	Xe II	-	[200]	Hu	5453.88	S	-	[750]	Bl	5446.547	Eu	2	-	-
5460.250	Pr	5	-	-	5453.876	Nd	3	-	-	5446.34	Kr II	-	[80]	Me
5460.086	Ce	12	-	-	5453.68	Tb	10	-	Ed	5446.244	Ta	5 s	-	-
5460.037	Xe I	-	[15]	IMe	5453.648	Ti I	12	25	-	5446.206	Sc I	15	-	-
5459.81	Tb	25	-	Ed	5453.57	Lu	8	1	Me	5446.196	Ce	10	-	-
5459.625	Ir I	3	-	-	5453.464	Gd	8	-	-	5446.145	W	5	-	-
5459.61	A I	-	[20]	Ms	5453.439	U	5	1	-	5445.660	Er	12	-	-
5459.588	Sm	2	-	-	5453.395	Os	18	-	-	5445.52	Xe II	-	[80]	Hu
5459.47	Kr I	-	[4]	Me	5453.263	Pr	4	-	-	5445.428	Pr	6 w	-	-
5459.4	bh Pb	8	-	L	5453.255	Ni I	3	-	-	5445.425	Ce	10	-	-
5459.284	U	8	2	-	5453.026	Mo	15	6	-	5445.228	Rh	25	1	-
5459.21	Ce	4	-	-	5453.018	Sm	100	-	-	5445.175	Nd	2	-	-
5459.164	Pd I	2	-	-	5452.965	Eu	1000 s	-	-	5445.037	Fe I	150	-	-
5458.972	Cl	3 w	-	-	5452.92	Hf	8	2	Me	5444.99	Cl II	-	[10]	Ks
5458.808	Ce	8	-	-	5452.712	Ru	7	-	-	5444.95	Se II	-	[50]	Bl
5458.80	Kr I	-	[7]	Me	5452.66	Gd	4	-	Ed	5444.923	Nd	4	-	-
5458.7	bh La	20	-	Me	5452.406	U	3	-	-	5444.62	Er	8	-	Ed
5458.687	La II	5	50	-	5452.305	Co I	25	-	-	5444.572	Co I	400 w	-	-
5458.562	U	2	2	-	5452.259	Sm	2	-	-	5444.476	U	10	6	-
5458.52	Se	-	[35]	Bt	5452.225	Th	8	-	-	5444.320	Rh	15	-	-
5458.412	Ta	12	-	-	5451.996	Ti I	12	-	-	5444.25	Cl II	-	[60]	Ks
5458.406	Er	8	-	-	5451.91	Si	-	2	Sy	5444.07	Hf II	20	30	Me
5458.34	P	-	[30]	Gu	5451.801	W	6	-	-	5443.88	A I	-	[20]	Ms
5458.15	Tb	10	-	Ed	5451.723	Ce	10	-	-	5443.651	Sm	10 d	1	-
5458.122	V I	15	15	-	5451.650	A I	-	[500]	IMe	5443.556	Eu	125	-	-
5458.060	Nd	4	-	-	5451.530	Eu	1000 s	-	-	5443.540	U	2	-	-
5458.043	Cb	5	3	-	5451.40	As	-	4	Ro	5443.42	Cl II	-	[100]	Ks

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5443.361	W	8	-	-	-	5436.83	O I	-	[200]	-	-	5429.298	Nd	5	-	-	-
5443.339	Dy	4	-	-	-	5436.727	Ti I	10	-	-	-	5429.149	Ti I	25	-	-	-
5443.310	Os	50	-	-	-	5436.666	Sm	2	-	-	-	5429.003	Ir	2	-	-	-
5443.227	V I	12	4	-	-	5436.595	Fe I	5	-	-	-	5428.79	Ba II	-	-	[5]	Ra
5443.21	A I	-	[100]	-	Ms	5436.435	U	2	-	-	-	5428.69	S	-	-	[250]	Bi
5443.16	Zr I	2	-	-	-	5436.322	Sm	9	-	-	-	5428.552	U	2	1	-	-
5443.118	Th	10	1	-	-	5436.305	Gd	10	-	-	-	5428.423	Zr I	4	-	-	-
5442.948	Sm	3	-	-	-	5436.279	In II	-	[100]	-	Ps	5428.25	Tb	10	-	-	Ed
5442.74	Er	8	-	-	Ed	5436.007	In II	-	[50]	-	Ps	5428.019	W	4	-	-	-
5442.60	Sc I	4	-	-	-	5435.898	Th	15	2	-	-	5427.832	Fe	-	8	-	Kn
5442.413	Cr	18	-	-	-	5435.871	Ni I	50	-	-	-	5427.692	Pd I	3	-	-	-
5442.274	Nd	25	-	-	-	5435.843	I II	-	[125]	-	Ke	5427.593	I	-	-	[8]	Ke
5442.22	A I	-	[500]	-	Ms	5435.78	Hf	3	-	-	Me	5427.590	Ru	25	-	-	-
5441.98	Tb	15	-	-	Ed	5435.76	O I	-	[100]	-	Ps	5427.587	Sm	3	1	-	-
5441.920	Sm	3	-	-	-	5435.684	Mo	30	12	-	-	5427.547	Mo	8	3	-	-
5441.821	Os	12	-	-	-	5435.635	In II	-	[30]	-	Ps	5427.50	Er	12	-	-	Ed
5441.56	Gd	8	-	-	Ed	5435.609	W	10	-	-	-	5427.464	Tb	10	-	-	-
5441.490	Nd	2	-	-	-	5435.60	Xe I	-	[5 h]	-	Me	5427.266	Pr	6	-	-	-
5441.45	Tb	10	-	-	Ed	5435.48	I I	-	[35]	-	Db	5427.250	Ce	8	-	-	-
5441.378	Sm	3	1	-	-	5435.41	Er	8	-	-	Ed	5427.225	W	6	1 h	-	-
5441.365	Rh	15	-	-	-	5435.267	Ta	80	-	-	-	5427.10	I I	-	-	[50]	Mu
5441.260	Nd	2	1	-	-	5435.161	Pd I	7	-	-	-	5426.932	Eu	200	-	-	-
5441.143	W	3 wh	-	-	-	5435.16	O I	-	[70]	-	Ps	5426.91	Yb	2	60	-	Me
5441.13	Gd	8	-	-	Ed	5435.128	Th	8	-	-	-	5426.887	Mo	20	5	-	-
5440.884	Sm	2	-	-	-	5435.11	Br	-	[15]	-	Bi	5426.752	I II	-	-	[2]	Mu
5440.653	Sm	3	-	-	-	5435.062	W	20	-	-	-	5426.736	Eu	2 h	-	-	-
5440.58	Yb	-	5	-	Me	5434.529	Co I	10	-	-	-	5426.706	Dy	5	-	-	-
5440.467	Ti	12 d	-	-	Bh	5434.527	Fe I	300	35	-	S	5426.43	Tb	15	-	-	Ed
5440.406	Zr I	3	-	-	-	5434.483	Nd	4	-	-	-	5426.388	Sm	3	-	-	-
5440.39	Xe I	-	[15]	-	Ed	5434.2	Ag	2	10 h	-	Kp	5426.366	Ce	6	-	-	-
5440.33	Tb	10	-	-	Me	5434.175	V I	50	50	-	-	5426.361	Zr I	3	-	-	-
5440.078	W	10	-	-	-	5434.156	Er	12	-	-	-	5426.256	Ti I	15	30	-	-
5440.069	U	3	-	-	-	5433.823	Sm	8	-	-	-	5426.05	Ta	-	-	[8]	Bi
5439.97	A I	-	[500]	-	Ms	5433.81	Er	12	-	-	Ed	5425.996	Mo	3	2	-	-
5439.923	Xe I	-	[30]	-	IMe	5433.703	Th	6	-	-	-	5425.92	P II	-	-	[150 w]	Gu
5439.856	Sm	2	-	-	-	5433.649	Ne I	-	[250]	-	IMe	5425.679	Th	15 d	3	-	-
5439.83	Er	8	-	-	Ed	5433.548	Sm	4	-	-	-	5425.638	Sm	9	-	-	-
5439.78	Ob	-	10 wh	-	Me	5433.54	Ob	-	10 wh	-	Me	5425.619	Co I	4	-	-	-
5439.711	Mo	12	6	-	-	5433.418	Mn	7	-	-	-	5425.57	Sc I	3	-	-	Me
5439.523	Rh I	20	1	-	-	5433.36	Er	8	-	-	Ed	5425.55	Ba I	10	-	-	Fl
5439.45	Gd	3	-	-	Ed	5433.340	Ce	8	-	-	-	5425.446	Rh	25	1	-	-
5439.408	Ru	5	-	-	-	5433.292	Th	4	-	-	-	5425.262	Fe II	-	2	-	Kn
5439.4	bh Zr	30	-	-	L	5433.283	Sc I	4	-	-	-	5425.25	Hg II	-	-	[200]	Pa
5439.312	V	-	8	-	-	5433.266	W	6	-	-	-	5425.00	Tb	15	-	-	Ed
5439.214	Ru	10	-	-	-	5433.24	Kr II	-	[2 hs]	-	Me	5425.00	Br	-	-	[15]	Bi
5439.042	Ti	4 h	-	-	-	5433.2	bh Zr	5	-	-	L	5424.927	W	2	-	-	-
5438.977	Sm	2	-	-	-	5433.18	P	-	[15]	-	Gu	5424.719	Rh I	25	1	-	-
5438.96	Xe II	-	[400]	-	Hu	5433.060	Ta	2 h	-	-	-	5424.68	Yb	-	10 h	-	Me
5438.872	W	8	-	-	-	5433.0	bh La	30	-	-	Me	5424.654	Ni I	30	-	-	-
5438.74	Er	12	-	-	Ed	5432.950	Fe I	3	-	-	-	5424.65	Gd	7	-	-	Ed
5438.74	Hf	5	2	-	-	5432.913	Pr	8	-	-	-	5424.637	W	3	-	-	-
5438.66	Tb	10	-	-	Ed	5432.83	S	-	[600]	-	Bi	5424.616	Ba I	100 R	30 R	-	Sz
5438.63	Kr II	-	[40]	-	Me	5432.729	Yb	5	100	-	-	5424.36	Yt I	5	-	-	Me
5438.59	Hf	2	-	-	Me	5432.548	Mn	40	-	-	-	5424.36	Cl II	-	-	[25]	Ke
5438.58	Si	-	3	-	Sy	5432.47	Er	12	-	-	Ed	5424.250	Dy	3	-	-	-
5438.426	Ce	10	-	-	-	5432.45	Tb	10	-	-	Ed	5424.15	Th	3	-	-	-
5438.316	Ti I	4	8	-	-	5432.360	Nd	3	1	-	-	5424.082	V I	25	25	-	-
5438.23	Yt I	20	2	-	-	5432.347	Cr	10	-	-	-	5424.076	Fe	400	20	-	-
5438.22	Sc I	4	-	-	Me	5432.337	Ti I	4	-	-	-	5424.068	Nd	3	-	-	-
5438.12	Tb	15	-	-	Ed	5432.068	Pr	3	1	-	-	5424.068	Rh	100	2	-	-
5438.005	I II	-	[35]	-	Ke	5432.048	Rh I	5	-	-	-	5423.961	Sm	2	1	-	-
5437.88	Lu	30	3	-	Me	5431.885	Re	30	-	-	-	5423.934	W	10	-	-	-
5437.800	W	3	2	-	-	5431.828	Rb I	15	-	-	IRz	5423.82	La II	3 h	4	-	Me
5437.757	Zr I	5	-	-	-	5431.796	Sm	3	-	-	-	5423.805	Re	6	-	-	-
5437.750	Mo	30	15	-	-	5431.661	Ta	60 w	-	-	-	5423.61	Gd	8	-	-	Ed
5437.659	V I	10	10	-	-	5431.529	Rb I	100	-	-	IRz	5423.603	Re	5	-	-	-
5437.576	Nd	2	-	-	-	5431.526	Nd	25	2	-	-	5423.549	Nd	3	-	-	-
5437.523	La I	4 h	-	-	-	5431.261	Cb	10 h	3	-	-	5423.52	Cl II	-	-	[100]	Ke
5437.414	Re	2	-	-	-	5431.162	Ir	2	-	-	-	5423.513	Zr	2	-	-	-
5437.402	In II	-	[50]	-	Ps	5431.135	Pr	3	-	-	-	5423.446	W	5	-	-	-
5437.393	Ba	5	-	-	Sz	5431.123	Th	10	-	-	-	5423.420	Ce	12	-	-	-
5437.392	Th	10	-	-	-	5431.1	bh La	20	-	-	Me	5423.316	Dy	5	-	-	-
5437.365	Pr	8 W	-	-	-	5431.018	Mo	15	5	-	-	5423.29	Rh I	15	-	-	-
5437.36	Cu II	-	2 h	-	Sh	5430.792	Nd	3	-	-	-	5423.274	Re	2	-	-	-
5437.28	P	-	[70]	-	Gu	5430.633	Sm	4	-	-	-	5423.25	Cl II	-	-	[150]	Ke
5437.274	Ob	30	10	-	-	5430.27	A I	-	[10]	-	Ms	5423.24	Tb	15	-	-	Ed
5437.256	Zr I	3	-	-	-	5430.243	Ce	10	-	-	-	5422.971	Sm II	4 wh	-	-	-
5437.10	Tb	10	-	-	Ed	5430.06	Xe	-	[2]	-	Hu	5422.887	W	9	-	-	-
5437.062	Rh	20	-	-	-	5430.06	Hf	1	4	-	Me	5422.80	Er	30	-	-	Ed
5437.0	bh Zr	40	-	-	L	5429.864	La I	10	-	-	-	5422.799	I	-	-	[10]	Ke
5436.986	Co I	25	-	-	-	5429.699	Fe I	500	40	-	S	5422.78	Br	-	-	[30]	Bi
5436.929	In II	-	[150]	-	Ps	5429.69	A I	-	[20]	-	Ms	5422.55	A I	-	-	[2]	Ms
5436.91	Zr I	2	-	-	-	5429.54	Er	12	-	-	Ed	5422.489	Nd	2	-	-	-
5436.882	Er	8	-	-	-	5429.485	V I	4	2	-	-	5422.438	Ob	15	5	-	-
5436.881	Nd	2	-	-	-	5429.407	Sc I	3	-	-	-	5422.423	Pr	3	1	-	-

5422.1—5399.5 Å.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5422.198	Sm	5 wh	2	-	5414.87	I	-	[15]	Bl	5406.309	W	8	-	-
5422.132	La I	3	-	-	5414.739	Nd	3	-	-	5406.174	Nd	2	-	-
5422.111	I	-	[10]	Ke	5414.672	Mo	6	2	-	5406.018	Mn	5	-	-
5421.918	U	2	1	-	5414.636	Er	50	-	-	5405.996	U	5	6	-
5421.9	bh F	5	-	L	5414.416	Sm	6 d	1	-	5405.99	Tm	2	10	-
5421.90	Lu	50	5	Me	5414.29	Yb	1	20	Me	5405.79	Mo	5	3	-
5421.862	W	7	-	-	5414.18	Er	12	-	Ed	5405.79	Hg	-	[7 wh]	Wd
5421.858	Zr I	3	-	-	5414.092	Ce	12	-	-	5405.778	Fe I	400	70	-
5421.837	Th	8	-	-	5413.947	U	2	1	-	5405.7	bh La	20	-	Me
5421.76	Xe I	-	[2 h]	Me	5413.93	Zr I	3	-	-	5405.65	I	-	[40]	Ke
5421.75	Tb	10	-	Ed	5413.9	bh F	2	-	L	5405.445	I	-	[8]	Ke
5421.6	Ga II	-	[2]	Sy	5413.834	W	6	-	-	5405.311	Eu	40	-	-
5421.569	Sm	25	-	-	5413.760	Eu	4 wh	-	-	5405.28	I II	-	[8]	Ke
5421.559	Nd	15	1	-	5413.687	Mn	30	-	-	5405.239	Sm	80	-	-
5421.346	A I	-	[500]	Ime	5413.398	Pr	8	-	-	5405.14	I	-	[40]	Ke
5421.195	Gd	12	-	-	5413.387	Ta	15	-	-	5405.126	Zr I	4	-	-
5421.1	bh F	5	-	L	5413.32	A I	-	[10]	Ms	5405.004	Cr	18	-	-
5421.080	Eu	125	-	-	5413.21	Gd	10	-	Ed	5404.970	Sm	4	-	-
5421.05	Ba II	-	[5]	Rs	5413.188	Pr	15 w	-	-	5404.955	Ta	80	-	Sz
5420.754	Dy	3	-	-	5412.965	W	6	-	-	5404.920	Ba	15	-	-
5420.711	Sm	25	3	-	5412.940	Nd	2	-	-	5404.87	O	-	[30]	Ps
5420.657	Nd	6	-	-	5412.801	Sm	3	-	Ps	5404.808	Pr	3	-	-
5420.53	Tb	10	-	Ed	5412.655	Ne I	-	[250]	Ps	5404.726	Rh	50	1	-
5420.44	Hf II	2	3	Me	5412.629	Gd	8	-	-	5404.47	Hf	4	1	Me
5420.385	Ce	20	-	-	5412.4	Os	15	-	-	5404.4	bh Zr	8	-	L
5420.362	Mn	60	-	-	5411.929	Nd	5	-	-	5404.319	W	7	1 h	-
5420.155	Ne I	-	[50]	Ps	5411.842	Eu	80	-	-	5404.148	Fe I	300	35	-
5420.15	Hg	-	[8]	Wd	5411.752	Ce	8	-	-	5404.023	Ti I	8	-	-
5419.887	Er	20	-	-	5411.72	I	-	[8]	Ke	5403.82	Tb	10	-	Ed
5419.870	Gd	3 d	-	-	5411.555	Pr	25	1	-	5403.819	Fe	30	-	-
5419.73	Os	8	-	-	5411.55	He II	-	[50]	Ps	5403.690	Sm	8	-	-
5419.687	Cs II	-	[60]	Sv	5411.408	Sm	40	-	Ps	5403.542	Ta	12	-	-
5419.421	Sm	3	-	-	5411.406	In II	-	[300]	Ps	5403.432	Os	8	-	-
5419.399	W	10	-	-	5411.245	Cb	5	3	-	5403.204	U	8	6	-
5419.204	Ti I	4	-	-	5411.227	Ni I	40	2	-	5403.14	Yb	20	1	Me
5419.15	Xe II	-	[1000]	Hu	5411.190	Gd	8	-	-	5403.03	Kr I	-	[2 h]	Me
5419.135	Dy	5	-	-	5411.155	Sm	4	-	-	5402.944	In II	-	[50]	Ps
5419.130	Ta	80 R	-	-	5410.97	Ti II	-	5	El	5402.92	Rn I	-	[10]	Rs
5419.10	Tb	10	-	Ed	5410.909	Fe I	200	10	-	5402.896	Nd	5	-	-
5419.069	Sm	4	-	-	5410.764	Th	8	-	-	5402.793	Cs	-	[40]	Sv
5419.042	Pr	3 W	-	-	5410.76	O	-	[30]	Ps	5402.791	Eu	1000	-	-
5418.855	Ru I	20	-	-	5410.63	Tb	10	-	Ed	5402.78	Yt II	30	50	Me
5418.781	Pr	3	-	-	5410.549	Ta	15	-	-	5402.69	A	-	[10]	Rt
5418.781	Ti II	8	4	-	5410.54	Er	8	-	Ed	5402.585	Pr	15 w	-	-
5418.74	Zr I	2	-	-	5410.470	A I	-	[500]	Ms	5402.57	Lu	150	10	Me
5418.734	In II	-	[150 h]	Ps	5410.41	Te	-	[25]	Bl	5402.550	Fe	4	-	-
5418.701	Ce	12	-	-	5410.12	Ne I	-	[5]	Ps	5402.507	Ta	80	30	Ps
5418.555	Ne I	-	[150]	Ps	5410.106	Sm	5 w	1	-	5402.443	In II	-	[30]	Ps
5418.480	In II	-	[50]	Ps	5409.92	Ti II	-	[12]	El	5402.315	Sm	3	-	-
5418.43	Kr II	-	[30 whs]	Me	5409.791	Cr I	300 R	30	-	5402.233	Tm	3	-	-
5418.216	In II	-	[30]	Ps	5409.65	P II	-	[150 w]	Gu	5402.06	Tb	25	-	Ed
5418.087	V I	15	-	-	5409.611	Ti I	50	1	-	5402.011	Sm	100 w	-	-
5418.02	Xe	-	[5]	Me	5409.512	Re	2	-	-	5401.983	Co I	100	-	-
5418.017	Ta	2	-	-	5409.224	Ce	50	-	-	5401.933	V I	100	100	-
5417.507	Os	40	-	-	5409.132	Fe I	10 h	-	-	5401.55	Tb	10	-	Ed
5417.487	Th	10	-	-	5409.1	bh Zr	5	-	L	5401.428	Sm	2	-	-
5417.383	Mo	20	10	-	5409.096	U	5	6	-	5401.394	Ru I	20	-	-
5417.36	Si	-	2	Sy	5408.940	Ti I	6	-	-	5401.208	Ce	6	-	-
5417.22	A I	-	[10]	Ms	5408.916	Cb	-	4 wh	-	5401.05	Mg II	2	5	Fl
5417.168	Ir	3	-	-	5408.780	Rh I	3	-	-	5401.038	Ru	125	-	-
5417.12	Se	-	[15]	Bt	5408.779	Ta	20	-	-	5401.01	Se II	-	[75]	Mz
5417.08	Gd	10	-	Ed	5408.59	O	-	[50]	Ps	5400.951	U	10	6	-
5417.02	Yt I	2	-	Me	5408.578	W	7	-	-	5400.946	Pr	4	-	-
5416.906	Tm	2	-	-	5408.34	Xe	-	[2]	Hu	5400.937	W	7	-	-
5416.879	Nd	2	-	-	5408.2	bh Zr	2	-	-	5400.858	Sm	3	-	-
5416.8	Ga II	-	[10]	Sy	5408.119	Co I	30	-	-	5400.77	Er	8	-	Ed
5416.693	Os	50	-	-	5407.855	Sm	12	-	-	5400.608	Cr	30	1	-
5416.381	Nd	15	-	-	5407.7	bh La	30	-	Me	5400.562	Ne I	-	[2000]	I
5416.353	Sm	4	-	-	5407.655	Th	8	-	-	5400.503	Fe I	125	-	-
5416.345	Os	80	-	-	5407.617	Zr I	7	-	-	5400.5	bh F	10	-	L
5416.344	Ba	8	-	Sz	5407.6	bh F	5	-	L	5400.486	Tm	8	-	-
5416.303	Cb	5	1 h	-	5407.511	Co I	100	-	-	5400.471	Mo	20	15	-
5416.20	Tb	15	-	Ed	5407.44	A	-	[20]	Rt	5400.45	Xe I	-	[4 h]	Me
5416.12	Sc I	3	-	Me	5407.424	Mn	60	-	-	5400.302	W	6	-	-
5416.052	Sm	100	-	-	5407.362	I II	-	[60]	Ke	5400.23	Ra I	-	[500]	Rs
5415.976	W	3	-	-	5407.33	Eu	4 h	-	Kn	5400.195	Nd	5	-	-
5415.694	La I	4	-	-	5407.288	U	3	1	-	5399.928	Dy	3	-	-
5415.693	Gd	12	-	-	5407.1	bh Zr	5	-	L	5399.88	Se	-	[8]	Bl
5415.690	Er	8	-	-	5407.09	Er	8	-	Ed	5399.80	Ra I	-	[250]	Rs
5415.525	W	6	-	-	5406.888	U	5	-	-	5399.758	Co I	10	-	-
5415.434	Th	20 d	3	-	5406.811	Sm	3	-	-	5399.742	Yb	1	15	-
5415.36	Xe II	-	[25 wh]	Hu	5406.61	Ra I	-	[500]	Rs	5399.69	Eu	4 h	-	Kn
5415.307	Nd	5	-	-	5406.611	Pd I	4	-	-	5399.677	Sm	2	-	-
5415.263	V I	75	75	-	5406.6	bh F	2	-	L	5399.585	W	5	-	-
5415.207	Fe I	500	20	-	5406.386	Mo	15	8	-	5399.574	Ce	12	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5399.53	Gd	8	-	Ed	5391.607	Sm	3	-	-	5385.38	Gd	10	-	Ed
5399.5	bh F	5	-	L	5391.60	Ba II	-	[50]	-	5385.137	V I	45	45	-
5399.489	Mn	40	-	-	5391.48	Os	3	-	-	5385.136	Zr I	15	-	-
5399.035	Ce	2	-	-	5391.475	Fe I	25	-	-	5384.96	Ti II	-	6	MI
5399.01	A I	-	[20]	Ms	5391.36	Hf II	6	10	Me	5384.93	Er	8	-	Ed
5398.959	Sm	2	-	-	5391.350	Cr	15	-	-	5384.895	V	-	3	Me
5398.923	Th	8	-	-	5391.248	Pr	3 h	-	-	5384.883	Sm	3	-	-
5398.731	Mo	5	1	-	5391.24	Dy	2	-	Ed	5384.70	Hg I	-	[15]	Wd
5398.285	Fe I	70	-	Bu	5391.180	Zr I	3	-	-	5384.634	Ti I	5	-	-
5398.222	W	5	-	-	5391.082	W	10	-	-	5384.242	U	4	-	-
5398.140	Sm II	15 d	-	-	5391.00	Eu	4	-	Kn	5384.20	Ti II	-	4	MI
5398.114	Nd	2	1	-	5390.982	Ir	4	-	-	5384.174	Gd	10	-	-
5397.969	W	10	-	-	5390.845	Yb	30	-	-	5384.13	Er	8	-	Ed
5397.914	Sm	3	-	-	5390.82	Yt I	2	-	Me	5384.037	Th	8	-	-
5397.90	Tb	10	-	Ed	5390.787	Pt	50	2	-	5383.883	Sm	3	-	-
5397.8	Bi II	5	8	MI	5390.72	A I	-	[40]	Ms	5383.848	Nd	2	-	-
5397.644	Ce	25	-	-	5390.655	Yb	30	-	-	5383.426	V I	40	40	-
5397.616	Fe	3	-	-	5390.562	Rb I	25 h	-	IRz	5383.41	Er	8	-	Ed
5397.60	A	-	[10]	Rt	5390.462	Co I	25	-	-	5383.371	Fe	400 h	40	Ps
5397.557	Ta	30	-	-	5390.461	Th	18	5	-	5383.257	Ne I	-	[25]	-
5397.383	Eu	10	-	-	5390.45	Cu II	-	5	Sh	5383.04	Hf	12	-	Me
5397.378	Mo	20	10	-	5390.440	Rh I	125	3	-	5382.927	Th	3	1	-
5397.186	Sm	3 w	1	-	5390.40	Rn I	-	[5]	Ra	5382.849	Cb	3	1	-
5397.131	Fe I	400	50	S	5390.4	bh Zr	3	-	L	5382.789	W	5	-	-
5397.094	Ti I	60	-	-	5390.394	Cr	18	-	-	5382.74	Se	-	[35]	Bt
5396.600	Ti I	12	-	-	5390.080	Pr	3	-	-	5382.613	Ce	10	-	-
5396.515	W	6	-	-	5389.992	Ti I	30	-	-	5382.608	Sm	2	-	-
5396.490	Re	15	-	-	5389.856	Yb	8	30	-	5382.482	Ir	2	-	-
5396.4	bh Sc	2	-	Me	5389.823	Sm	5	-	-	5382.4	bh La	20	-	Me
5396.33	Cb	10	1	-	5389.688	W	5	-	-	5382.371	Zr I	3 h	-	-
5395.986	Ta	80 w	-	-	5389.574	Dy	8	-	-	5382.13	Er	12	-	Ed
5395.885	Pr	15	-	-	5389.513	Gd	20	-	-	5382.037	Sm	3	-	-
5395.879	Zr I	3	-	-	5389.461	Fe I	60	-	Bu	5381.997	W	9	-	-
5395.87	Er	50	-	Ed	5389.301	Ta	100 W	-	-	5381.925	La II	15	100	-
5395.859	Cb	2 h	3	-	5389.3	bh Zr	3	-	L	5381.82	Cd II	2	20	Vs
5395.78	Yb	-	7	Me	5389.177	Ti I	15	-	-	5381.77	La II	5	20	Me
5395.696	Ce	10	-	-	5389.10	A I	-	[40]	Ms	5381.748	Co I	150	-	-
5395.576	Dy	5	-	-	5389.01	Hg I	-	[8]	Wd	5381.741	Nd	2	-	-
5395.52	Br I	-	[150 I]	Ks	5388.802	Pr	4 h	-	-	5381.71	Se	-	[15]	BI
5395.422	Ir	2	-	-	5388.72	Er	12	-	Ed	5381.703	Pr	3	-	-
5395.244	Pd I	50	2	-	5388.688	Mo	12 h	5 h	-	5381.48	Rh I	100	-	Me
5395.242	Ce	10	-	-	5388.609	Ru I	5	-	-	5381.336	Cb	8	3	-
5394.89	Hf	2	-	Me	5388.593	W	10	-	-	5381.262	Pr	60	2	-
5394.842	Pd	5 h	-	-	5388.521	Mn	10	-	-	5381.229	Zr	2 h	-	-
5394.755	W	7	-	-	5388.508	Ta	40 W	-	-	5381.20	Sb II	-	[30]	Lg
5394.750	Th	8	-	-	5388.48	Al II	-	[5]	Sy	5381.105	Co I	150	-	-
5394.738	Xe I	-	[20]	IMe	5388.350	Ni I	3	-	-	5381.043	Sm	3	-	-
5394.674	Mn	50	-	-	5388.302	Cb	5	3	-	5381.02	Ti II	5	10 h	-
5394.517	Mo	20	15	-	5388.06	Th	3	-	-	5381.02	S I	-	[8]	Ms
5394.483	Sm	8	-	-	5388.041	Pr	4 h	-	-	5380.997	La II	50	100	-
5394.374	Cb	3	1	-	5388.024	W	15	-	-	5380.709	Cb	5	1	-
5394.347	Gd	10	-	-	5388.01	Yb	5	-	Me	5380.611	Nd	3	-	-
5394.2	Rn	-	[20]	Wa	5387.982	Sm	50	3	-	5380.605	Yt I	5	-	-
5394.102	U	3 h	-	-	5387.88	Pt	15	-	-	5380.5	bh La	10	-	Me
5393.98	Cb	-	2 wh	Me	5387.573	Cr	18	-	-	5380.403	Sm	10	3	-
5393.971	A I	-	[200]	Ms	5387.50	Fe	2	-	-	5380.35	Er	8	-	Ed
5393.96	Cu II	-	3	Sh	5387.37	A I	-	[40]	Ms	5380.26	Gd	8	-	Ed
5393.85	Yb	6 hl	-	Me	5386.978	Cr	20	-	-	5380.242	C I	-	[300]	Jn
5393.845	W	3	1	-	5386.926	Os	4	-	-	5380.21	Se II	-	[20]	Mz
5393.729	Co I	3 h	-	-	5386.87	P	-	[150 w]	Gu	5380.043	I II	-	[15]	Ke
5393.70	Tb	10	-	Ed	5386.786	Th	2	-	-	5380.022	La I	3	-	-
5393.665	Gd	10	-	-	5386.763	Ce	8 w	-	-	5379.890	Ce	10	-	-
5393.553	Sm	2	-	-	5386.685	Sm	2	-	-	5379.8	bh F	10	-	L
5393.50	Hg I	-	[5]	Wd	5386.653	Zr I	4	-	-	5379.712	Re	5	-	-
5393.454	Eu	2	-	-	5386.606	Th	6	-	-	5379.665	Ta	4	-	-
5393.4	bh F	10	-	L	5386.6	bh F	10	-	L	5379.64	Kr I	-	[15]	Me
5393.40	Yb	-	6	Me	5386.354	Ce	15	-	-	5379.577	Fe	35	-	-
5393.391	Ce	30	-	-	5386.342	Fe	3	-	-	5379.548	Zr I	2	-	-
5393.182	Fe I	150	10	-	5386.209	U	8	12	-	5379.5	bh Zr	5	-	L
5393.177	V I	100	-	-	5386.18	Er	12	-	Ed	5379.436	W	8	-	-
5393.0	bh Zr	3	-	L	5386.1	Rn	-	[10]	Wa	5379.406	Sm	5 w	1	-
5392.912	Eu	150	-	-	5385.964	Sm	2	-	-	5379.308	Os	7	-	-
5392.842	U	5	-	-	5385.896	Nd	15	1	-	5379.111	Th	4	-	-
5392.797	W	5	-	-	5385.879	Ru I	25	-	-	5379.095	Rh I	100	3	-
5392.795	Xe I	-	[100]	IMe	5385.831	Ta	2	-	-	5378.858	Fe	5	-	-
5392.666	Sm	5	-	-	5385.80	Tb	10	-	Ed	5378.833	Th	5	-	-
5392.573	Th	10	1	-	5385.79	Hg	-	[4]	Wd	5378.71	Tb	10	-	Ed
5392.371	Ni I	5	-	-	5385.72	Os	8 h	-	-	5378.7	bh F	10	-	L
5392.3	bh F	5	-	L	5385.628	Dy	3	-	-	5378.45	N I	-	[30]	Mt
5392.21	Cl	-	[10]	BI	5385.623	Er	12	-	-	5378.227	Nd	2	-	-
5392.075	Se I	20	-	-	5385.600	Ir	4	-	-	5378.14	Re	3	-	-
5392.04	Pd	3	-	-	5385.569	U	4	-	-	5378.11	P II	-	[30 I]	Gu
5391.974	Tm	5	-	-	5385.52	As II	-	15	Ro	5378.073	Sm	5	-	-
5391.882	Ce	10 w	-	-	5385.5	bh F	10	-	-	5378.037	Cd II	5	50	-
5391.842	U	3	1	-	5385.45	Sr II	2 h	-	Sd	5377.88	Tb	25	-	Ed

5377.8—5355.4 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5377.839	Ru I	25	—	—	—	5370.269	Sm	8 d	2	—	—	5363.084	Cb	2	2	—	—
5377.79	Er	8	—	—	Ed	5370.048	Sm	2	—	—	—	5362.893	Os	8	—	—	—
5377.785	Nd	8	—	—	—	5369.97	A I	—	—	[5]	Ms	5362.864	Fe II	—	15	—	Do
5377.645	Pd I	2	—	—	—	5369.957	Fe	150 h	20 h	—	—	5362.857	Nd	2	—	—	—
5377.628	Mn	40	—	—	—	5369.911	Gd	12	—	—	—	5362.842	W	7	2	—	—
5377.441	Pr	3	—	—	—	5369.91	Se I	—	—	[175]	Rd	5362.8	Rn	—	—	[10]	Wa
5377.303	U	5	3	—	—	5369.87	I II	—	—	[40]	Ke	5362.766	Co I	500 w	—	—	—
5377.3	bh Zr	2	—	—	L	5369.81	Re	40	—	—	—	5362.751	Fe	6	—	—	—
5377.209	Mn	8	—	—	—	5369.72	Tb	40	—	—	Ed	5362.659	Pd I	15	—	—	—
5377.095	La II	30	200	—	—	5369.645	Ti	20	1	—	—	5362.598	Rb I	50	—	—	IRz
5377.045	Re	300 W	—	—	—	5369.628	Gd	8	—	—	—	5362.57	Gd	6	—	—	Ed
5376.99	Yb	—	10	—	Me	5369.576	Co I	500 w	—	—	—	5362.556	Zr I	8	—	—	—
5376.911	Eu	200	—	—	—	5369.458	Re	30	—	—	—	5362.397	U	3	8 h	—	—
5376.85	Cu II	—	3	—	Sh	5369.387	Zr I	3	—	—	—	5362.249	Th	4	—	—	—
5376.849	Fe I	5 h	—	—	—	5369.298	Rh I	5	—	—	—	5362.248	Ne I	—	—	[25]	Ps
5376.792	Os	50	—	—	—	5369.240	Dy	3	—	—	—	5362.244	Xe I	—	—	[15]	IMe
5376.754	Th	6	—	—	—	5369.163	Sm	40	—	—	—	5362.087	Ru	4	—	—	—
5376.69	Er	12	—	—	Ed	5369.119	Ce	8	—	—	—	5362.009	Cb	3 h	2 h	—	—
5376.55	Tb	10	—	—	Ed	5368.987	Pt	50	1	—	—	5361.891	Nd	2	—	—	—
5376.103	Dy	4	—	—	—	5368.888	Co	30	—	—	—	5361.774	Ru	100	—	—	—
5375.97	Tb	40	—	—	—	5368.85	Er	20	—	—	Ed	5361.724	Ti I	3	—	—	—
5375.918	Cb	5	1	—	—	5368.830	Pr	5 d	—	—	—	5361.641	Gd	10	—	—	—
5375.770	Th	10	1	—	—	5368.77	Gd	10	—	—	Ed	5361.592	Eu	300	—	—	—
5375.764	U	4 h	—	—	—	5368.71	P	—	—	[30]	Gu	5361.474	Nd	25	1	—	—
5375.7	bh Zr	2	—	—	L	5368.700	W	15	—	—	—	5361.421	W	9	—	—	—
5375.405	Gd	10	—	—	—	5368.546	Cr	18	—	—	—	5361.411	Th	6	—	—	—
5375.351	Th	10	—	—	—	5368.432	U	8	6	—	—	5361.38	Hf II	1	2	—	Me
5375.346	Sc I	12	—	—	—	5368.42	Cu II	—	10	—	Sh	5361.35	Ba II	—	—	[40]	Rs
5375.30	Mn	2	—	—	—	5368.399	Cb	3 h	1	—	—	5361.174	Nd	3	—	—	—
5375.266	Cb	15	3	—	—	5368.360	Sm	80	—	—	—	5360.917	Er	8	—	—	—
5375.15	P	—	[15]	—	Gu	5368.29	Yb	2	20	—	Me	5360.898	Mo	10	5	—	—
5375.047	Eu	4 h	—	—	—	5368.199	Dy	3	—	—	—	5360.809	Eu	150	—	—	—
5374.975	Ne I	—	[50]	—	IMe	5368.148	Eu	2	—	—	—	5360.80	Br	—	—	[15]	Bl
5374.709	Re	5	—	—	—	5368.07	Xe II	—	—	[100]	Hu	5360.755	Sm	2	—	—	—
5374.49	I	—	[15 h]	—	Bl	5367.762	Er	12	—	—	—	5360.75	Hf	2 h	—	—	Me
5374.442	W	10	—	—	—	5367.68	Gd	8	—	—	Ed	5360.7	bh Zr	5	—	—	L
5374.307	Sm	4	—	—	—	5367.60	I II	—	—	[5]	Ke	5360.6	Ga II	—	—	[5]	Sy
5374.242	Pr	4	—	—	—	5367.460	Fe	200 h	15 h	—	—	5360.557	Mo	100 h	—	70 h	—
5374.19	Kr II	—	[3 h]	—	Me	5367.3	Pb II	—	—	[40]	Ea	5360.442	Ne I	—	—	[35]	Ps
5374.160	W	12	1 h	—	—	5367.27	N I	—	—	[3]	Du	5360.09	Ga	2	—	12	Kl
5374.14	Se I	—	[150]	—	Rd	5367.111	Mo	10 h	—	—	—	5360.012	Ne I	—	—	[150]	IMe
5374.026	Sm	4	—	—	—	5367.03	Xe	—	—	[6]	Me	5359.98	Yb	—	—	10	Me
5373.996	Hf	15	3	—	Me	5367.008	Mo	12	5	—	—	5359.954	Ce	10	—	—	—
5373.86	Hf	15	3	—	Me	5366.91	Ta	—	—	[25]	Bl	5359.8	bh F	10	—	—	L
5373.715	Cr	8	—	—	—	5366.771	Sm	10 d	2	—	—	5359.521	K I	40 l	—	—	Da
5373.712	Fe I	15	—	—	—	5366.726	Co I	5	—	—	—	5359.298	Ce	8	—	—	—
5373.693	Sm	10 d	2	—	—	5366.659	Re	2	—	—	—	5359.194	Cb	3	—	—	—
5373.675	Nd	2	—	—	—	5366.649	Ti	8	—	—	—	5359.188	Gd	8	—	—	—
5373.493	A I	—	[500]	—	Ms	5366.547	Sm	2	—	—	—	5359.184	Co I	300 w	—	—	—
5373.454	U	3	2	—	—	5366.4	bh F	10	—	—	L	5358.989	Pr	4	—	—	—
5373.1	bh F	10	—	—	L	5366.35	Gd	7	—	—	Ed	5358.923	Co I	40 w	—	—	—
5373.013	Ta	12 h	—	—	—	5366.28	Te	—	—	[15]	Bl	5358.645	Yb	15	100	—	—
5373.01	Tb	10	—	—	Ed	5366.222	Ne I	—	—	[25]	Ps	5358.6	bh F	10	—	—	L
5373.003	Tm	8	5	—	—	5365.947	Ta	12	—	—	—	5358.53	Cs II	—	—	[500]	Sv
5372.853	W	10	—	—	—	5365.897	La I	5	—	—	—	5358.335	U	3	—	—	—
5372.66	N I	—	[20 h]	—	Mt	5365.878	Cb	1	5	—	—	5358.330	W	9	—	—	—
5372.500	I II	—	[10]	—	Ke	5365.62	Cu II	—	—	5	Sh	5358.33	Hf	2	—	—	Me
5372.5	Pb	—	10 h	—	Kl	5365.47	Se I	—	—	[125]	Rd	5358.020	Ne I	—	—	[10]	Ps
5372.451	Zr	2 h	—	—	—	5365.405	Fe	40	—	—	—	5357.873	La I	40	—	—	—
5372.404	Mo	20	10	—	—	5365.404	Gd	10	—	—	—	5357.757	Gd	8	—	—	—
5372.39	Xe II	—	[200]	—	Hu	5365.2	bh F	10	—	—	L	5357.608	Eu	1000	—	—	—
5372.371	Pr	3	—	—	—	5365.121	Nd	2	—	—	—	5357.458	Zn II	6	—	[3]	—
5372.314	Ne I	—	[75]	—	Ps	5365.06	Hg	—	—	[20 wh]	Wd	5357.203	Ce	10	—	—	—
5372.224	Gd	20	—	—	—	5364.940	Ir	4	—	—	—	5357.195	Sc II	—	5	—	—
5372.1	Pb II	—	[40]	—	Ea	5364.883	Fe	200 h	10 h	—	—	5357.16	Tb	10	—	—	Ed
5371.935	Nd	20	1	—	—	5364.824	Co I	4	—	—	—	5357.116	W	9	—	—	—
5371.9	bh F	10	—	—	L	5364.626	Xe I	—	—	[30]	IMe	5356.976	Nd	15	—	—	—
5371.84	Al II	—	[50]	—	Sy	5364.588	Eu	4	—	—	—	5356.859	Ir	2	—	—	—
5371.80	Hf II	2	4	—	Me	5364.484	Mn	4	—	—	—	5356.84	Cb	—	—	3 h	—
5371.74	Kr I	—	[2]	—	Me	5364.47	P	—	—	[15]	Gu	5356.77	N I	—	—	[50]	Du
5371.600	Ce	6	—	—	—	5364.359	Sm	50	—	—	—	5356.721	Eu	40	—	—	—
5371.493	Fe I	700	—	—	S	5364.323	Ir	15	—	—	—	5356.606	W	8	—	—	—
5371.42	Hg II	—	[10]	—	Nu	5364.3	bh Zr	2	—	—	L	5356.49	A	—	—	[10]	Ms
5371.4	P	—	[30]	—	Gu	5364.284	Mo	70 h	25 h	—	—	5356.477	Mo	25	12	—	—
5371.388	Nd	2	—	—	—	5364.20	Br I	—	—	[20]	Ks	5356.467	Rh I	30	1	—	—
5371.35	Ni I	30	—	—	—	5364.073	Rh I	4	—	—	—	5356.176	I	—	—	[8]	Ke
5371.3	Rn	—	[10]	—	Wa	5363.820	U	6	4	—	—	5356.100	Gd I	40	—	—	—
5371.12	Hf	2	—	—	Me	5363.670	Yb	25	2	—	—	5355.958	Gd	4	—	—	—
5371.117	Cb	3	1	—	—	5363.659	Nd	2	—	—	—	5355.883	Sm	9	—	—	—
5371.10	N I	—	[5]	—	Du	5363.611	Th	5	—	—	—	5355.752	Sc I	7	—	—	—
5370.979	Cs II	—	[80]	—	Sv	5363.354	Zr I	3	—	—	—	5355.707	Eu	4 h	—	—	—
5370.69	Gd	25 r	—	—	Ed	5363.343	W	5	—	—	—	5355.702	Cb	8	3	—	—
5370.43	I I	—	[2]	—	Db	5363.325	Ce	15	—	—	—	5355.617	Ce	10	—	—	—
5370.356	Cr	10	—	—	—	5363.283	Pd I	2	—	—	—	5355.513	Mo	12 h	3 h	—	—
5370.27	Br I	—	[20]	—	Ks	5363.27	Xe II	—	—	[80]	Hu	5355.45	Kr II	—	—	[10 h]	Me

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5355.422	Ne I	-	-	[150]	IMe	5349.308	Rh	20	-	-	-	5342.250	Ta	80	-	-	-
5355.310	Cb	3	-	2 h	-	5349.294	Sc I	30	-	-	-	5341.920	Pr	5	-	-	-
5355.260	W	10	1	-	-	5349.261	Nd	2	-	-	-	5341.877	Eu	20	-	-	-
5355.181	Ce	10	-	-	-	5349.247	Re	3	-	-	-	5341.823	Gd	8	-	-	-
5355.176	Ne I	-	-	[150]	Ps	5349.210	Ne I	-	-	[150]	Ps	5341.78	A I	-	-	[10]	Ms
5355.081	Eu	200	-	-	-	5349.16	Cs II	-	-	[25]	Sv	5341.58	I II	-	-	[2]	Bl
5354.88	Tb	40	-	-	Ed	5349.137	Sm	25	-	-	-	5341.500	Ti I	8	-	-	-
5354.879	Mo	25	15	-	-	5349.12	Lu	25	2	Me	-	5341.333	Co I	300 w	-	-	-
5354.73	Hf	12	2	-	Me	5349.093	Ta	80	-	-	-	5341.289	Sm	80	-	-	-
5354.679	Ta	80 r	-	-	-	5349.087	Co I	80	-	-	-	5341.093	Ne I	-	-	[1000]	I
5354.465	W	10	-	-	-	5348.95	Cs	-	-	[25]	Sv	5341.065	Mn	200	100	-	-
5354.423	Gd	10	-	-	-	5348.949	W	30	-	-	-	5341.049	Ta	150 w	80	-	-
5354.399	Rh I	300	5	-	-	5348.911	Mo	4 h	1 h	-	-	5341.040	Se I	5	-	-	-
5354.307	Pr	3	-	-	-	5348.752	Sm	20	-	-	-	5341.04	Cl	-	-	[2]	Ks
5354.24	Sb II	-	-	[200]	Lg	5348.689	Gd	20	-	-	-	5341.026	Fe I	200	15	-	S
5354.1	bh C	100	-	-	L	5348.40	Hf II	10	15	Me	-	5340.804	Cb	8	5	-	-
5354.05	Hg I	-	-	[30 wh]	Wd	5348.319	Cr I	150 R	15	-	-	5340.742	Ir I	5	-	-	-
5353.81	Ga	2	-	-	Fl	5348.087	Sm	20	-	-	-	5340.7	bh F	20	-	-	L
5353.8	bh Pb	3	-	-	L	5348.080	Ta	7	-	-	-	5340.67	La II	80	100	-	-
5353.682	W	5	-	-	-	5348.069	Mn	10	-	-	-	5340.437	Cr I	50	-	-	-
5353.534	Ce	50	30	-	-	5348.047	Er	20	-	-	-	5340.314	Dy	6	-	-	-
5353.513	Ne I	-	-	[5]	Ps	5347.93	Tb	15	-	-	Ed	5340.312	Sm	3	-	-	-
5353.485	Co I	500 w	-	-	-	5347.83	Gd	20	-	-	Ed	5340.15	N II	-	-	[5]	Fl
5353.46	A	40	-	[20]	Ms	5347.806	Ce	8	-	-	-	5339.938	Fe I	200	30	-	-
5353.415	Ni I	40	-	-	-	5347.490	Co I	80	-	-	-	5339.670	K I	40 l	-	-	Da
5353.412	V I	50	50	-	-	5347.412	A I	-	-	[200]	Ms	5339.65	Rh I	2	-	-	Me
5353.4	bh F	10	-	-	L	5347.37	Kr I	-	-	[2]	Me	5339.528	Co I	100 w	-	-	-
5353.389	Fe I	60	2	-	-	5347.205	Yb	40	200	-	-	5339.413	Re	10	-	-	-
5353.375	Zr	2	-	-	-	5347.043	Th	10	1 w	-	-	5339.408	Sc I	4	-	-	-
5353.31	Re	2 h	-	-	-	5347.0	bh F	20	-	-	L	5339.38	Xe II	-	-	[500]	Hu
5353.296	Cb	5	4	-	-	5346.93	Er	2	-	-	-	5339.3	bh F	20	-	-	L
5353.283	Gd	25	-	-	-	5346.785	Pd I	2 h	-	-	-	5339.278	W	5	-	-	-
5353.258	Yb	100	250	-	-	5346.76	Kr II	-	-	[60 hl]	Me	5339.13	Kr I	-	-	[20]	Me
5353.24	Eu	80	-	-	-	5346.698	W	4	-	-	-	5339.083	Mo	4	1	-	Kl
5353.68	Co I	6	-	-	Sh	5346.529	Ce	2	-	-	-	5338.88	Ga	-	-	-	-
5352.403	Cr	80	2	-	-	5346.481	Er	8	-	-	-	5338.77	N II	-	-	[15]	Fl
5352.35	Tb	10	-	-	Ed	5346.477	Tm	40	25	-	-	5338.77	Yb	-	3	-	Me
5352.347	Mo	10	4	-	-	5346.394	Th	6	-	-	-	5338.629	Re	10	-	-	-
5352.320	U	3 h	3 h	-	-	5346.30	Hf II	10	40	Me	-	5338.614	V I	4	6	-	-
5352.283	Sm	2	-	-	-	5346.14	Tb	10	-	-	Ed	5338.429	Zr I	2	-	-	-
5352.25	Os	20	-	-	-	5346.03	Os	8	-	-	-	5338.326	Ti I	8	-	-	-
5352.21	Er	8	-	-	Ed	5346.02	Er	8	-	-	Ed	5338.3	Ga II	-	-	[2]	Sy
5352.123	Dy	4	-	-	-	5345.93	Yb	10	50	-	-	5338.267	Eu	4 h	-	-	-
5352.1	bh F	10	-	-	L	5345.81	A I	-	-	[20]	Ms	5338.192	I II	-	-	[300]	Ke
5352.049	Co I	500 w	-	-	-	5345.81	P II	-	-	[50]	Gu	5338.008	Nd	2	-	-	-
5351.95	I II	-	-	[2]	Mu	5345.807	Cr I	300 R	25	-	-	5337.90	Tb	10	-	-	Ed
5351.915	Zr	3	-	-	-	5345.709	Nd	6	-	-	-	5337.89	Xe I	-	-	[2 h]	Me
5351.902	W	20	-	-	-	5345.692	Gd	10	-	-	-	5337.548	Gd	20	-	-	-
5351.671	Eu	150	-	-	-	5345.67	Yb	20	100	-	-	5337.492	Cd II	5	25	-	-
5351.558	Sm	15 d	3	-	-	5345.66	S	-	-	[25]	Bl	5337.432	Dy	3	-	-	-
5351.32	Yb	50	3	-	-	5345.6	bh F	20	-	-	L	5337.369	W	15	-	-	-
5351.21	N II	-	-	[30]	-	5345.43	Br I	-	-	[80 l]	Ks	5337.201	Mo	10	3	-	-
5351.13	Th	8	-	-	Fl	5345.315	Th	8	1	-	-	5337.133	Er	8	-	-	-
5351.084	Ti I	50	60	-	-	5345.22	Re	2	-	-	-	5336.851	Nd	2	-	-	-
5351.045	Cb	3	2	-	-	5345.146	I	-	-	[300]	Ke	5336.812	Cb	5	3	-	-
5350.899	Zr I	2	-	-	-	5345.14	Gd	10	-	-	-	5336.809	Ti II	18	30 h	-	-
5350.742	Cb	150	50	-	-	5345.105	Pd I	10	-	-	-	5336.640	Rh I	5	-	-	-
5350.618	Sm	15	-	-	-	5345.102	Os	5	-	-	-	5336.552	Nd	8	-	-	-
5350.58	A I	-	-	[20]	Ms	5345.097	Ce	5	-	-	-	5336.512	U	6	-	-	-
5350.46	Ti I	5000 R	2000 R	-	Fl	5344.935	Fe	8	-	-	-	5336.490	Pr	5 r	-	-	-
5350.445	W	18	-	-	-	5344.761	Cr I	15	-	-	-	5336.36	Er	8	-	-	Ed
5350.44	Er	12	-	-	Ed	5344.72	P	-	-	[150 w]	Gu	5336.23	Os	20	-	-	-
5350.41	Te	25	-	[8]	Bl	5344.566	Co I	10	-	-	-	5336.177	Ce	15	-	-	-
5350.406	Gd	-	-	-	-	5344.507	Er	30	-	-	-	5336.168	Co I	50	-	-	-
5350.399	Eu	60 h	-	-	-	5344.470	Mn	12	-	-	-	5336.127	Ta	40	-	-	-
5350.392	Re	2 w	-	-	-	5344.28	A I	-	-	[5]	Ms	5335.930	Ru	100	-	-	-
5350.380	V	-	-	3 h	Me	5344.170	Cb	400	200	-	-	5335.710	Ne I	-	-	[10]	Ps
5350.353	Zr II	4	5	-	-	5343.933	Er	30	-	-	-	5335.708	Ce	15	-	-	-
5350.296	Sc I	3	-	-	-	5343.862	Pr	8	-	-	-	5335.588	V	12 h	5 h	-	Me
5350.093	Zr II	4	5	-	-	5343.76	Eu	2	-	-	-	5335.228	Er	8	-	-	-
5350.03	Xe	-	-	[2]	Hu	5343.646	Nd	3	-	-	-	5335.161	Yb	150	400	-	-
5349.917	U	5	3	-	-	5343.596	Zr I	2 h	-	-	-	5335.11	Br	-	-	[70]	Bl
5349.881	Mn	20	-	-	-	5343.585	Th	12	-	-	-	5334.870	Cb	50	10	-	-
5349.862	W	6	-	-	-	5343.580	Cb	5 h	1 h	-	-	5334.838	Co I	70	-	-	-
5349.786	Mo	6	4	-	-	5343.470	Fe I	12 h	-	-	-	5334.787	Mo	4	-	-	-
5349.736	Fe I	4 h	-	-	-	5343.388	Co I	600 w	-	-	-	5334.78	Kr I	-	-	[10]	Me
5349.702	Sc I	6	-	-	-	5343.284	Ne I	-	-	[600]	IMe	5334.704	Ru	60	-	-	-
5349.65	I	-	-	[15]	Bl	5343.022	Gd	10	-	-	-	5334.674	Ce	5	-	-	-
5349.621	Ba	7	-	-	Sz	5342.974	K I	30 l	-	-	Da	5334.5	bh F	30	-	-	L
5349.62	Gd	8	-	-	Ed	5342.961	Sc I	5	-	-	-	5334.42	N I	-	-	[5]	Du
5349.577	Nd	4	-	-	-	5342.766	Sm	3	-	-	-	5334.326	Nd	2	-	-	-
5349.575	Ta	30	-	-	-	5342.708	Co I	800 w	-	-	-	5334.228	Sc II	-	4	-	Ed
5349.474	Eu	2	-	-	-	5342.545	Pr	3	-	-	-	5334.20	Er	20	-	-	-
5349.474	Ca I	12	12	-	-	5342.4	Hg II	-	-	[12]	Ps	5333.854	Re	30	-	-	-
5349.31	Cs	-	-	[15]	Sv	5342.383	Tm	3	-	-	-	5333.825	Ce	6	-	-	-

5333.7—5310.4 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5333.78	Ca	—	2	Ad	5326.44	I	—	[2]	Ke	5317.726	A I	—	[60]	Ms
5333.73	Ag I	8	—	Bx	5326.396	Ne I	—	[75]	IMe	5317.687	Sm	8 d	2	—
5333.70	Cl II	—	[15]	Ks	5326.351	Cb	3	1	—	5317.61	Er	12	—	Ed
5333.654	Co I	100	—	—	5326.247	Co I	10	—	—	5317.41	Kr II	—	[30 hl]	Me
5333.42	La II	3	5	Me	5326.157	Fe	6	—	—	5317.32	Ta	2 s	—	Ke
5333.41	Kr II	—	[500 h]	Me	5325.954	Co I	25	—	—	5317.278	Re	40 w	—	—
5333.36	Er	8	—	Ed	5325.90	Pt	3	—	Me	5317.130	Mo	5	1	—
5333.338	Sm	4	—	—	5325.863	Mo	10	2	—	5317.095	Mn	7	—	—
5333.323	Ne I	—	[50]	Ps	5325.563	Fe II	—	4	Kn	5317.013	Cb	3	1 h	—
5333.30	Fe	3	—	Rl	5325.278	Co I	300 w	—	—	5316.942	Eu	15	—	—
5333.25	Gd	20	—	Ed	5325.145	Th	15 d	3	—	5316.885	V I	5	5	Me
5333.21	Sn II	2 h	1	Ar	5324.893	Sm	25 d	3	—	5316.809	Gd	8	—	—
5333.1	bh F	30	—	L	5324.80	A I	—	[5]	Ms	5316.806	Co I	—	[25]	Ps
5333.017	Er	12	—	—	5324.697	Dy	5	—	—	5316.780	Co I	300 w	—	Wd
5332.931	Ru I	40	—	—	5324.61	Al II	—	[25]	Sy	5316.69	Hg I	—	[15 wh]	—
5332.761	Re	10	—	—	5324.592	Nd	2	—	—	5316.609	Fe II	—	150	Do
5332.674	Co I	200 w	—	—	5324.583	Pt	4	—	—	5316.604	Nd	5	—	—
5332.656	V	—	5	Me	5324.467	Mo	15	10	—	5316.45	Er	8	—	Ed
5332.5	bh Zr	2	—	L	5324.26	Hf II	20	30	Me	5316.2	bh F	80	—	L
5332.482	Re	2	—	—	5324.182	Fe I	400	70	—	5316.07	P II	—	[150 w]	Gu
5332.45	Zr	2 h	—	—	5323.958	Ti I	3	—	—	5316.07	Al II	—	[70]	Sy
5332.428	Nd	2	—	—	5323.6	bh V	2	—	L	5315.820	Mo	10	3	—
5332.36	Sn II	—	[20]	Mc	5323.573	La I	—	3	—	5315.806	Gd	7	—	—
5332.093	Sm II	12	—	—	5323.534	Sm	10 d	—	—	5315.76	Tb	15	—	Ed
5332.04	Br	—	[100]	Bl	5323.360	Cb	4	1	—	5315.552	Cb	10	5	—
5331.941	Gd	8	—	—	5323.228	K I	40 I	—	Da	5315.50	Se II	—	[15]	Bt
5331.896	Re	80	—	—	5323.017	Eu	2 h	—	—	5315.326	Ru	10	—	—
5331.853	U	2	2	—	5322.819	I II	—	[20]	Ke	5315.279	U	8	1	—
5331.761	Sc I	4	—	—	5322.818	V	—	4 h	Me	5315.27	Er	8	—	Ed
5331.746	Zr I	2	—	—	5322.778	Pr	30	3	—	5315.219	V I	3	—	Me
5331.54	As II	—	200	Ro	5322.77	Kr II	—	[60 h]	Me	5315.072	Ce	6	—	—
5331.483	Pr	6	1	—	5322.710	Gd	8	—	—	5315.07	Fe I	5 h	—	Rl
5331.466	Co I	500 w	80	—	5322.374	Rb I	10 h	—	IRz	5315.044	Mo	20	12	—
5331.19	Cb	—	2 h	Me	5322.2	bh F	30	—	L	5314.895	Ce	6	—	—
5331.1	bh Pb	3	—	L	5322.054	Fe I	30	—	—	5314.786	Rh I	40	1	—
5331.08	Kr I	—	[2]	Me	5322.02	Kr I	—	[2]	Me	5314.781	Ne I	—	[30]	Ps
5331.08	Rh	15	—	—	5322.0	bh Zr	2	—	L	5314.71	Pr	4 w	—	—
5331.02	Gd	8	—	Ed	5321.871	Sm	50 d	4	—	5314.7	bh F	50	—	L
5330.837	Zr I	3	—	—	5321.791	Gd	10	—	—	5314.594	I	—	[8]	Ke
5330.777	Ne I	—	[600]	IMe	5321.605	U	6	3	—	5314.47	N II	—	[5]	Fl
5330.69	Er	12	—	Ed	5321.52	Re	2	—	—	5314.468	V I	10	4	—
5330.66	O I	—	[500]	Ps	5321.508	Gd	8	—	—	5314.405	Ce	8	—	—
5330.582	Ce	25	—	—	5321.330	Cb	5	2	—	5313.932	Ce	8	—	—
5330.57	Br	—	[15]	Bl	5321.30	Ca	—	3	Ad	5313.92	Er	8	—	Ed
5330.16	I I	—	[2]	Db	5321.265	Gd	8	—	—	5313.893	Mo	25	15	—
5329.999	Fe	15	—	—	5321.264	Zr I	4	—	—	5313.87	Xe II	—	[500]	Hu
5329.887	W	4	—	—	5321.263	Re	40	—	—	5313.751	Sm	6	—	—
5329.833	Zr I	2	—	—	5321.250	Sm	3	—	—	5313.722	U	4	3	—
5329.823	Sr I	40	2	—	5321.14	Yb	—	6	Me	5313.39	Pr	3	—	—
5329.74	Rh I	30	2	Me	5321.113	Fe	8 h	—	—	5313.268	U	3	4	—
5329.73	Ag I	2 h	—	Kp	5321.086	Pr	8	1	—	5313.261	Ti I	7	—	—
5329.719	Cr I	5	2	—	5321.02	Te	—	[8]	Bl	5313.080	W	4	1	—
5329.59	O I	—	[150]	Ps	5320.790	Nd	2	—	—	5313.01	Ir	2	—	Me
5329.495	Ce	10	—	—	5320.78	Yt II	2	4	Me	5312.883	Th	6	—	—
5329.43	Rh I	3	—	Me	5320.774	Th	8	—	—	5312.878	Cr I	40	—	—
5329.371	Th	8	—	—	5320.75	N II	—	[50]	Fl	5312.756	Mo	10	2	—
5329.279	Eu	2	—	—	5320.7	bh F	30	—	L	5312.732	U	5	5	—
5329.223	U	10	1	—	5320.70	S II	—	[35]	Ig	5312.658	Co I	400 w	—	—
5329.214	Ir	3	—	—	5320.597	Sm	100	—	—	5312.624	Dy	3	—	—
5329.15	Kr II	—	[4 h]	Me	5320.29	Ra I	—	[250]	Rs	5312.573	Pd I	15	—	—
5328.98	O I	—	[100]	Ps	5320.165	La I	3	—	—	5312.515	Th	6	—	—
5328.823	V I	18 W	12	Me	5320.1	Sb II	—	10	Dv	5312.327	Pr	5	1	—
5328.81	Cu	—	3	Sh	5320.048	Fe	6	—	Bu	5312.32	Al II	—	[35]	Sy
5328.70	N I	—	[70]	Du	5319.984	Zr I	2	—	—	5312.210	Sm II	100	—	—
5328.69	Xe	—	[2]	Hu	5319.886	Mo	12	8	—	5312.172	Eu	4 h	—	—
5328.60	Pt	2	—	Me	5319.83	Xe	—	[2]	Hu	5311.98	Th	8	—	—
5328.534	Fe I	150	35	S	5319.818	Nd	60	2	—	5311.922	V	—	5	Me
5328.379	Ta	40	—	—	5319.492	Cb	15	5	—	5311.89	Er	8	—	Ed
5328.339	Cr	5 h	8	—	5319.377	U	6	8	—	5311.881	U	18	18	—
5328.3	bh F	30	—	L	5319.337	Pt	9	—	—	5311.88	Dy	3 h	—	Ed
5328.27	Gd	12	—	Ed	5319.23	Tb	40	—	Ed	5311.856	Gd	10	—	—
5328.18	Tb	10	—	Ed	5319.110	Nd	2	—	—	5311.767	Zr II	2	2	—
5328.050	Fe I	400	—	—	5319.087	V I	5	5	Me	5311.60	Hf II	100	150	Me
5328.02	A I	—	[20]	Ms	5318.967	Sm	3	—	—	5311.55	Re	4 h	—	—
5327.90	Xe	—	[2]	Hu	5318.92	Er	12	—	Ed	5311.461	Nd	15	1	—
5327.87	Kr I	—	[2]	Me	5318.873	W	20	—	—	5311.402	Zr I	10	—	—
5327.710	U	8	6	—	5318.775	Cr I	30	—	—	5311.375	W	7	—	—
5327.459	Re	100	—	—	5318.602	Cb	100	12	—	5311.119	Pr	10	1	—
5327.330	Gd	20	—	—	5318.423	Th	8	—	—	5311.07	Te	—	[35]	Bl
5327.109	W	5	—	—	5318.337	Sc II	2	12	—	5311.02	Zn I	7	—	Hf
5327.063	Mo	20	12	—	5318.045	Sm	5	—	—	5310.992	Zr I	2	—	—
5326.976	Th	10	—	—	5317.948	Mo	12	3	—	5310.965	Ta	2	—	—
5326.9	bh F	30	—	L	5317.82	Tb	10	—	Ed	5310.76	Al II	—	[10]	Sy
5326.883	Sm	2	—	—	5317.814	W	5	—	—	5310.52	N I	—	[3]	Du
5326.474	Sm	3	1	—	5317.806	Cb	5	2	—	5310.484	U	4	—	—

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5310.3	bh F	80	-	-	L	5303.873	Eu	300	-	-	-	5297.60	Tb	10	-	-	Ed
5310.260	Th	12 d	-	1	-	5303.79	Zr I	2	-	-	-	5297.450	U	8	-	-	-
5310.26	Kr II	-	-	[4 h]	Me	5303.72	Te	-	-	[15]	Bl	5297.360	Cr I	5 h	2 h	-	-
5310.241	Zn I	7	-	-	Hg	5303.556	La II	100	125	-	-	5297.257	Ti I	70	2	-	-
5310.208	K II	-	-	[25]	Dm	5303.44	Tb	10	-	-	Ed	5296.968	Mn II	-	[40]	-	Cz
5310.205	Co I	20	-	-	-	5303.419	Fe II	25	25	-	Do	5296.940	Sm	6	2	-	-
5310.191	Sm	2	-	-	-	5303.349	Ce	8	-	-	-	5296.8	bh F	100	-	-	L
5310.038	U	10	8	-	-	5303.272	V	1	20 h	-	Me	5296.788	Zr I	9	-	-	-
5310.03	Er	12	-	-	Ed	5303.232	Sm	2	-	-	-	5296.686	Cr I	15 rh	15	-	-
5310.023	Eu	4 h	-	-	-	5303.21	P	-	-	[50]	Gu	5296.598	Ce	15	-	-	-
5309.828	In II	-	-	[100]	Ps	5303.205	Nd	5	-	-	-	5296.55	Tb	10	-	-	Ed
5309.68	Hf	6	1	-	Me	5303.15	Er	12	-	-	Ed	5296.52	I I	-	[150]	-	Bl
5309.517	A I	-	-	[200]	Ms	5302.910	Sm	50	-	-	-	5296.338	Cb	5	2	-	-
5309.493	Sm	8	-	-	-	5302.83	Xe	-	-	[2]	Hu	5296.32	A I	-	[5]	-	Ms
5309.48	N I	-	-	[3]	Mt	5302.808	Ba	20	5	-	Sz	5296.09	P II	-	[300 w]	-	Gu
5309.46	Tb	10	-	-	Ed	5302.768	Gd	25	-	-	-	5295.91	Pr	3	-	-	-
5309.398	In II	-	-	[70]	Ps	5302.724	Eu	30	-	-	-	5295.788	Ti I	50	1	-	-
5309.33	Yb	2	5	-	Me	5302.7	bh F	100	-	-	L	5295.73	Tb	10	-	-	Ed
5309.27	Xe II	-	-	[150]	Hu	5302.658	Sm	3	-	-	-	5295.65	Os	20	-	-	-
5309.267	Ru I	125	-	-	-	5302.62	La II	50	150	-	Me	5295.629	Pd I	200	10	-	-
5309.146	I	-	-	[15]	Ke	5302.607	Nd	2 h	-	-	-	5295.56	Eu	2	-	-	Kn
5309.035	In II	-	-	[70]	Ps	5302.58	Os	15	-	-	-	5295.466	Mo	20	12	-	-
5309.010	Dy	6	-	-	-	5302.320	Mn II	-	-	[60]	Cz	5295.292	Mn II	-	[30]	-	Cz
5308.96	Pr	3	-	-	-	5302.314	Fe I	300	-	-	-	5295.009	Ta	40	-	-	-
5308.952	Ba	10	-	-	Sz	5302.30	Er	30	-	-	Ed	5294.87	Hf	12	2	-	Me
5308.924	Mn	5 h	-	-	-	5302.279	Nd	12	1	-	-	5294.823	Zr I	8	-	-	-
5308.810	Sm	3	-	-	-	5302.167	V I	8	5	-	-	5294.654	Sm	5	-	-	-
5308.7	bh F	80	-	-	L	5301.984	La II	300 r	200	-	-	5294.627	Ru	4	-	-	-
5308.66	Kr II	-	-	[200]	Me	5301.969	Zr I	6	-	-	-	5294.596	Eu	300	-	-	-
5308.648	Zn I	8	-	-	Hg	5301.936	Sc I	2	2	-	-	5294.48	Ca	2 h	1	-	Ad
5308.554	Ce	8	-	-	-	5301.684	Gd	25	-	-	-	5294.216	Mn II	-	[20]	-	Cz
5308.544	U	25	3	-	-	5301.585	Dy	10	-	-	-	5294.143	Pd I	6	-	-	-
5308.4	bh Zr	2	-	-	L	5301.406	Th	12	2	-	-	5294.130	Ba	10	-	-	Sz
5308.384	Zr I	2	-	-	-	5301.34	Ca	-	-	2	Ad	5294.068	Ce	12	-	-	-
5308.315	Ce	5	-	-	-	5301.26	Er	12	-	-	Ed	5294.04	V I	18 wh	18 wh	-	Me
5308.276	Nd	2	-	-	-	5301.057	Co I	700 w	-	-	-	5293.973	Fe	8	-	-	Bu
5308.2	Ph II	-	-	[6]	Ea	5301.03	Se II	-	-	[18]	Bl	5293.95	Hg II	-	[12]	-	Ps
5308.19	Tb	10	-	-	Ed	5301.02	Pt	150	10	-	Me	5293.68	Eu	50 w	-	-	Kn
5307.82	Hf	4	-	-	Me	5300.936	Yb	6	60	-	-	5293.63	P II	-	[30]	-	Gu
5307.62	Tb	10	-	-	Ed	5300.77	Re	3 h	-	-	-	5293.458	Mo	20	10	-	-
5307.603	Zr I	2	-	-	-	5300.749	Cr I	25	4	-	-	5293.396	Ta	30	-	-	-
5307.54	La	3	-	-	-	5300.74	Kr I	-	-	[3]	Me	5293.383	Cr	5	-	-	-
5307.463	Th	10	2	-	-	5300.67	Te	-	-	[25]	Bl	5293.289	Cb	4	1	-	-
5307.365	Fe I	125	-	-	S	5300.59	Er	8	-	-	Ed	5293.168	Nd	60	4	-	-
5307.322	Gd	25	-	-	-	5300.587	U	8	1	-	-	5293.085	W	3	-	-	-
5307.281	Cr I	12	-	-	-	5300.577	Nd	2	-	-	-	5292.9	bh F	150	-	-	L
5307.280	Ru	5	-	-	-	5300.18	Tb	10	-	-	Ed	5292.865	Cr	3	-	-	-
5307.121	Yb	40	-	-	-	5300.125	Zr I	2	-	-	-	5292.79	Tb	15	-	-	Ed
5307.115	Er	12	-	-	-	5300.024	Ti I	8	-	-	Bh	5292.78	Hf	2	-	-	Me
5307.11	Tm	100	20	-	Me	5299.85	Yb	3	-	-	-	5292.733	U	2	2	-	-
5306.959	Cb	4 h	1	-	-	5299.85	Hf II	8	10	-	Me	5292.630	Pr	50	2	-	-
5306.8	Pb II	-	-	[20]	Ea	5299.79	Kr I	-	-	[2 h]	Me	5292.531	Zr	2	-	-	-
5306.78	Tb	10	-	-	Ed	5299.79	I	-	-	[10]	Ke	5292.517	Cu I	50	-	-	IBu
5306.73	Re	2	-	-	-	5299.53	Hg II	-	-	[10]	Nu	5292.37	Er	8	-	-	Ed
5306.717	Gd	10	-	-	-	5299.515	Zr	2	-	-	-	5292.283	Re	10	-	-	-
5306.609	Cs II	-	-	[25]	Sv	5299.470	U	6	3	-	-	5292.22	Xe II	-	[800]	-	Hu
5306.472	Nd	5	-	-	-	5299.278	Mn II	-	-	[50]	Cz	5292.144	Rh I	80	1	-	-
5306.452	Ru	7	-	-	-	5299.201	Zr I	2	-	-	-	5292.10	Pr	60 w	-	-	-
5306.37	Xe I	-	-	[3]	Me	5299.192	Sm	2	-	-	-	5292.084	Mo	20	15	-	-
5306.351	Cb	3	1	-	-	5299.00	O I	-	-	[70]	Ps	5291.94	Pr	3	-	-	-
5306.260	Mo	15	8	-	-	5298.981	Cb	3	2 h	-	-	5291.665	Nd	10	-	-	-
5306.0	bh Zr	2	-	-	L	5298.876	Nd	3	-	-	-	5291.36	U	3	1	-	-
5305.88	Er	8	-	-	-	5298.854	Mn	4	-	-	-	5291.251	Eu	200	-	-	-
5305.87	Tm	20	20	-	Me	5298.81	U	2	-	-	-	5291.171	Sm	3	-	-	-
5305.854	Ru	7	-	-	-	5298.781	Os	20	-	-	-	5291.165	Ru I	25	-	-	-
5305.77	A II	-	-	[10]	Rt	5298.780	Fe	12	-	-	-	5291.0	bh F	200	-	-	L
5305.758	Ba	8	-	-	Sz	5298.64	Er	12	-	-	Ed	5290.945	Ba	10	-	-	Sz
5305.580	Th	10	-	-	-	5298.6	bh F	100	-	-	L	5290.941	Ce	12	-	-	-
5305.562	Re	25	-	-	-	5298.592	Gd	15	-	-	-	5290.850	Fe I	15	-	-	-
5305.51	Zr I	2 h	-	-	-	5298.44	Ti I	40	1	-	-	5290.836	La II	60	100	-	-
5305.501	Eu	4	-	-	-	5298.36	Bi	20	8	-	Om	5290.716	V	10	10	-	-
5305.35	Se II	-	-	[500]	Bl	5298.350	Sm	10	2	-	-	5290.505	U	3	2	-	-
5304.99	Te	-	-	[25]	Bl	5298.3	bh Zr	2	-	-	L	5290.289	V I	3	3	-	Me
5304.860	Ru	60	-	-	-	5298.29	Ce	10	-	-	-	5290.1	Hg I	-	[10]	-	Wd
5304.756	Ne I	-	-	[70]	IMe	5298.269	Cr I	15 R	25	-	-	5290.00	A I	-	[20]	-	Ms
5304.72	Tb	15	-	-	Ed	5298.190	Ne I	-	-	[150]	IMe	5289.98	Hf II	3	10	-	Me
5304.625	Th	5	-	-	-	5298.156	Eu	20	-	-	-	5289.942	Sm	15	-	-	-
5304.51	Er	12	-	-	Ed	5298.122	Cb	3	2	-	-	5289.937	Pr	6 w	-	-	-
5304.502	Sm	3	-	-	-	5298.106	Pr	25	-	-	-	5289.895	Yt	6	-	-	-
5304.4	bh F	100	-	-	L	5298.060	Mo	15	3	-	-	5289.82	Yt II	3	5	-	Me
5304.40	Lu	20	2	-	Me	5298.06	Hf II	80	100	-	Me	5289.71	Tb	15	-	-	Ed
5304.211	Cr I	20	-	-	-	5297.976	Cr I	5 h	1 h	-	-	5289.51	Mn	2 h	-	-	-
5304.19	Hf	2	-	-	Me	5297.827	Dy	3	-	-	-	5289.346	Pr	9	-	-	-
5304.10	Br	-	-	[30]	Bl	5297.742	Th	8	-	-	-	5289.329	Ir	2	-	-	-
5304.03	La I	25	-	-	-	5297.64	Cd I	3	-	-	Ps	5289.28	Ti I	3	-	-	-

5289.2—5268.7 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5289.247	Eu	125	-	-	-	5281.66	A	-	-	[2]	Rt	5275.554	W	20	-	-	-
5288.813	Ti	15	-	-	-	5281.66	Xe	-	-	[2]	Hu	5275.53	Re	500 w	-	-	-
5288.65	I	-	-	[15]	Bl	5281.541	Sm	10 d	-	2	-	5275.314	Dy	5	-	-	-
5288.60	Fe	12	-	-	Ed	5281.375	Ce	10	-	-	-	5275.3	bh V	10	-	-	L
5288.530	Fe	30	-	-	-	5281.18	N I	-	-	[20]	Du	5275.220	Mo	4	1	-	-
5288.397	U	6	6	-	-	5281.05	Tb	25	-	-	Ed	5275.171	Cr I	3	3	-	-
5288.161	Nd	2	-	-	-	5281.04	Sm II	6	-	-	-	5275.08	O I	-	[50]	-	Ps
5288.114	Sm	3	-	-	-	5281.017	Ta	2	-	-	-	5275.05	Eu	10	-	-	Kn
5288.06	Pr	3 w	-	-	-	5280.864	Mo	50	25	-	-	5275.04	Hf	7	1	-	Me
5287.97	P	-	-	[15]	Gu	5280.822	Ru I	12	-	-	-	5275.03	Tb	10	-	-	Ed
5287.922	Fe	100	20	-	Bu	5280.65	Eu	20 h	-	-	Kn	5275.025	Ta	7	-	-	-
5287.806	Co I	15	-	-	-	5280.649	Co I	500 w	-	-	-	5274.813	W	8	-	-	-
5287.70	Os	10	-	-	-	5280.502	Sm	3	-	-	-	5274.61	Kr I	-	-	[4]	Me
5287.637	V	8	8	-	-	5280.435	V I	12	12	-	Me	5274.42	Cu	4 h	-	-	Kn
5287.574	Co I	10	-	-	-	5280.40	A	-	-	[60]	Ms	5274.244	Ce	50	3	-	-
5287.439	Sm	10 d	2	-	-	5280.389	U	30	4	-	-	5274.126	Sm II	10	-	-	-
5287.30	Tb	10	-	-	Ed	5280.360	Fe	15	-	-	-	5274.077	Dy	3	-	-	-
5287.231	Eu	125	-	-	Me	5280.289	Cr	15	20	-	-	5274.044	Cs II	-	-	[40]	Sv
5287.188	Cr I	40	-	-	-	5280.21	Al II	-	[50]	Sy	-	5274.043	Ne I	-	-	[40]	Ps
5286.964	U	5	2	-	-	5280.124	Rh I	10	-	-	-	5273.86	Er	12	-	-	Ed
5286.93	Ti	8	-	-	-	5280.090	Th	6	-	-	-	5273.777	Ir	5	-	-	-
5286.92	A	-	-	[20]	Rt	5280.070	Ne I	-	[50]	Ps	-	5273.739	U	3	4	-	-
5286.86	Kr	-	-	[2 h]	Me	5280.050	Zr I	6	-	-	-	5273.492	Ir	2	-	-	-
5286.837	Ce	12	-	-	-	5279.91	Tb	15	-	-	Ed	5273.439	Cr I	15	-	-	-
5286.683	Nd	3	-	-	-	5279.841	Mo	12	2	-	-	5273.431	Nd	25	2	-	-
5286.67	Pr	10 w	-	-	-	5279.84	Kr I	-	[9]	Me	-	5273.378	Fe I	50	4	-	-
5286.38	Xe I	-	-	[3 h]	Me	5279.824	Ta	60 w	-	-	-	5273.337	Ru	4	-	-	-
5286.14	Yb	-	-	4	Me	5279.708	Dy	3	-	-	-	5273.271	Ta	3	-	-	-
5286.12	Pt	10	-	-	-	5279.650	Mo	20	12	-	-	5273.170	Fe I	80	4	-	-
5286.11	Hg II	-	-	[2]	Ps	5279.619	Ba	5	-	-	Sz	5272.930	Gd	10	-	-	-
5286.11	Xe I	-	-	[4 h]	Me	5279.55	Yb	15	100	-	-	5272.90	Er	20	-	-	-
5286.09	Hf	4	-	-	Me	5279.433	Cb	10	1	-	-	5272.815	Sm II	50 d	-	-	-
5286.08	A I	-	-	[60]	Ms	5279.4	Eu	2	-	-	Kn	5272.72	Pr	3	-	-	-
5286.04	Er	12	-	-	Ed	5279.358	Mo	10	1	-	-	5272.7	Ba	-	20	-	Sx
5285.892	Ru	7	-	-	-	5279.33	Er	30	-	-	Ed	5272.646	Th	6	-	-	-
5285.85	Al II	-	-	[50]	Sy	5279.15	La II	5	15	-	-	5272.56	C II	-	5	-	Fl
5285.82	Tb	10	-	-	Ed	5279.05	A I	-	[20]	Ms	-	5272.483	Cb	5	2	-	-
5285.752	Sc I	10	15	-	-	5278.91	S I	-	[15]	Fh	-	5272.48	Eu	400	-	-	Kn
5285.727	Eu	40	-	-	-	5278.91	Er	8	-	-	Ed	5272.374	Gd	6	-	-	-
5285.7	bh Mg	2	-	-	L	5278.62	Al II	-	[15]	Sy	-	5272.33	Ti	15	-	-	-
5285.629	Pr	40	1	-	-	5278.61	S I	-	[5]	Fh	-	5272.261	Dy	4	-	-	-
5285.61	Er	8	-	-	Ed	5278.602	W	9	-	-	-	5272.07	Tb	15	-	-	Ed
5285.459	Eu	40	-	-	-	5278.48	Lu	-	2 h	Me	-	5272.018	U	8	2	-	-
5285.45	Cl	-	-	[2]	Bl	5278.414	W	2	-	-	-	5272.010	Cr I	25	1	-	-
5285.44	Cb	3 h	-	-	-	5278.262	Cr	6	-	-	-	5271.97	Ca	10	-	-	Ad
5285.258	Cb	20	10	-	-	5278.242	Re	100	-	-	-	5271.95	Eu	2000	-	-	Kn
5285.188	Sm	4	-	-	-	5278.24	Tb	10	-	-	Ed	5271.880	Ce	15 w	-	-	-
5284.987	Dy	3	-	-	-	5278.180	U	12	15	-	-	5271.84	Os	8 w	-	-	Me
5284.971	Sc I	2	2	-	-	5278.16	Eu	15	-	-	Kn	5271.797	Mo	20	10	-	-
5284.583	Re	2	-	-	-	5277.91	Ra I	-	[8]	Rs	-	5271.75	Gd	4	-	-	Ed
5284.549	Th	5	-	-	-	5277.70	Er	12	-	-	Ed	5271.726	Ru	5	-	-	-
5284.416	Fe	2	-	-	Rl	5277.68	Al II	-	[10]	Sy	-	5271.7	Eu	5	-	-	Kn
5284.390	Ti I	18	35	-	-	5277.625	Ba	10	-	-	Sz	5271.57	Cd II	2 h	12	-	Vs
5284.350	Nd	2	-	-	-	5277.543	Ce	8	-	-	-	5271.532	Cb	200	50	-	-
5284.347	Sm	2	-	-	-	5277.502	Th	15 d	3	-	-	5271.400	Sm	150	-	-	-
5284.103	Mo	12	4	-	-	5277.409	Zr I	10	-	-	-	5271.33	Hg II	-	-	[4]	Ps
5284.092	Fe II	-	70 h	-	Do	5277.397	Dy	3	-	-	-	5271.22	Se II	-	-	[150]	Bl
5284.080	Ru I	100	-	-	-	5277.358	Mo	10	2	-	-	5271.199	La I	100	20	-	-
5284.02	Er	8	-	-	Ed	5277.32	Pr	5 W	1	-	-	5271.07	Bi II	2	15	-	MI
5283.889	Os	8	-	-	-	5277.3	Hg	-	[6]	Ps	-	5271.063	Ce	10	-	-	-
5283.865	Gd	10	-	-	-	5277.10	Eu	2	-	-	Kn	5271.06	Tb	10	-	-	Ed
5283.843	Mo	12	6	-	-	5277.070	Yb	200	6	-	-	5270.984	Re	200 W	-	-	-
5283.77	Al II	-	-	[100]	Sy	5276.968	Ce	5	-	-	-	5270.843	Ba II	-	-	[12]	Ps
5283.69	Yt I	2 h	-	-	Me	5276.90	Er	8	-	-	Ed	5270.694	Nd	5	-	-	-
5283.67	Ir	4	-	-	-	5276.879	Nd	10	1	-	-	5270.54	Er	8	-	-	Ed
5283.626	Fe I	400	40	-	-	5276.81	Al II	-	[10]	Sy	-	5270.508	Rb II	-	15	-	Rr
5283.492	Co I	125 w	-	-	-	5276.701	U	2	2	-	-	5270.360	V I	2 h	-	-	-
5283.451	Ti I	50	2	-	-	5276.537	Gd	20	-	-	-	5270.360	Fe I	400	80	-	S
5283.43	A I	-	-	[20]	Ms	5276.522	Cu II	-	-	15	Sh	5270.34	Bi II	7	20	-	MI
5283.30	Xe I	-	-	[2 h]	Me	5276.50	Kr II	-	[100 h]	Me	-	5270.322	Be II	-	[10]	-	Ps
5283.28	Ra I	-	-	[250]	Rs	5276.47	Ag I	6	-	-	Bx	5270.276	Ca I	20	10	-	-
5283.089	Gd	10	-	-	-	5276.43	La I	20	-	-	-	5269.988	Cu II	-	30	-	Sh
5282.914	Sm	100	-	-	-	5276.42	Al II	-	[10]	Sy	-	5269.971	Ti I	4	-	-	-
5282.823	Eu	1000	-	-	-	5276.407	Th	4	-	-	-	5269.948	Sm	2	-	-	-
5282.65	Er	12	-	-	Ed	5276.39	Hf II	1	3	-	Me	5269.920	Cb	5	3	-	-
5282.535	V I	3	12 h	-	Me	5276.275	Mo	20	10	-	-	5269.778	Nd	6	1	-	-
5282.493	Gd	10	-	-	-	5276.195	Cb	200	50	-	-	5269.71	Bi II	8	30	-	MI
5282.46	Xe II	-	-	[10]	Hu	5276.192	Co I	400 w	-	-	-	5269.541	Fe I	800	-	-	-
5282.386	Ti I	15	45	-	-	5276.03	Cr I	5 h	3 h	-	HI	5269.35	I	-	-	[30]	Bl
5282.282	Os	5	-	-	-	5276.03	Er	20	-	-	Ed	5269.292	W	12	-	-	-
5281.931	Ti I	4	8	-	-	5275.994	Fe II	2	15	-	Do	5269.266	Rh I	50	1	-	-
5281.910	V I	4	8	-	Me	5275.925	U	12	-	-	-	5269.23	Tb	10	-	-	Ed
5281.799	Fe I	300	20	-	-	5275.689	Cr I	4 h	1 wh	-	-	5268.946	Mo	12	5	-	-
5281.692	Ni I	3	-	-	-	5275.680	V I	8 h	8 h	-	-	5268.794	Gd	20	-	-	-
						5275.66	Eu	30	-	-	Kn	5268.77	Eu	2	-	-	Kn

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5268.62	Ti II	5	1	-	-	5261.02	Tb	10	-	-	Ed	5253.458	La I	100	5	-	-
5268.515	Co I	500 w	-	-	-	5260.978	V I	30	30	-	-	5253.455	Th	6	-	-	-
5268.348	Ni I	10	-	-	-	5260.90	Eu	2	-	-	Kn	5253.449	Sm	3	-	-	-
5268.31	Xe II	-	[50]	-	Hu	5260.850	Cb	3	1	-	-	5253.38	Eu	2	-	-	Kn
5268.24	Pt	2 h	-	-	Me	5260.84	Pt	18	-	-	-	5253.38	Er	8	-	-	Ed
5267.96	Cd II	2 h	10	-	Vs	5260.8	Bi II	-	25	-	MI	5253.375	In II	-	-	[15]	Ps
5267.93	Rh I	5	-	-	Me	5260.771	Mn	10	-	-	-	5253.07	Se II	-	-	[50]	Bi
5267.908	U	3	3	-	-	5260.61	Re	2	-	-	-	5253.031	Cb	10	5	-	-
5267.66	Pr	3	-	-	-	5260.555	Dy	6	-	-	-	5252.96	Tb	10	-	-	Ed
5267.48	A I	-	[2]	-	Ms	5260.528	Sm	3	-	-	-	5252.86	Eu	2	-	-	Kn
5267.422	U	6 h	-	-	-	5260.44	Hf II	30	40	-	Me	5252.786	A I	-	-	[300]	IMe
5267.34	Tm	10	10	-	Me	5260.44	Xe II	-	[300]	-	Hu	5252.766	Sm II	40 d	-	-	-
5267.122	Dy	3	-	-	-	5260.429	Ta	8	-	-	-	5252.443	U	2	1	-	-
5267.033	Ba I	25	12	-	Sz	5260.391	Ca I	4	4	-	-	5252.351	Re	3	-	-	-
5266.94	I	-	[8 h]	-	Bi	5260.352	V	20	20	-	-	5252.32	As II	-	8	-	Ro
5266.833	Ru	15	-	-	-	5260.26	Er	8	-	-	Ed	5252.164	Gd	15	-	-	-
5266.579	Fe I	500	40	-	-	5260.224	Rb I	5	-	-	IRz	5252.108	Ti I	35	1	-	-
5266.487	Co I	500 w	-	-	-	5260.168	Mo	10 h	3 h	-	-	5251.971	Fe	12	-	-	-
5266.472	Ru	12	-	-	-	5260.131	Cb	5	2	-	-	5251.89	Xe	-	-	[2 h]	Me
5266.40	Eu	1000	-	-	Kn	5260.031	Rb I	20	-	-	IRz	5251.886	Sm	150	-	-	-
5266.301	Co I	100	-	-	-	5259.990	Ti I	15	30	-	-	5251.847	Cb	5	5	-	-
5266.295	Ti I	5	-	-	-	5259.933	Ce	8	-	-	-	5251.743	Cb	5 h	5	-	-
5266.222	Ru	4	-	-	-	5259.89	Xe II	-	[25]	-	Hu	5251.738	Pr	10 w	1	-	-
5266.127	V I	20 h	20 h	-	-	5259.86	Eu	2	-	-	Kn	5251.667	Ru I	25	-	-	-
5266.03	Fe I	6 h	-	-	Bb	5259.797	Os	15	-	-	-	5251.664	Cb	10	20	-	-
5266.00	Tb	10	-	-	Ed	5259.743	Pr	125	3	-	-	5251.49	Ti I	6	-	-	-
5265.979	Ti I	70	3	-	-	5259.63	Tb	10	-	-	Ed	5251.41	Rh I	25	-	-	Me
5265.825	Co I	25	-	-	-	5259.62	C II	-	30	-	FI	5251.175	Gd	30	-	-	-
5265.748	Ni I	5	-	-	-	5259.60	Ti	10	-	-	-	5251.142	Mo	5	1	-	-
5265.722	Cr I	30	10	-	-	5259.389	La II	40	50	-	-	5250.95	Ti I	12	-	-	-
5265.710	Ce	15	-	-	-	5259.355	W	20	-	-	-	5250.816	Nd	10	1	-	-
5265.656	Sm	10	-	-	-	5259.27	Rh	8	1	-	-	5250.650	Fe I	150	-	-	S
5265.562	Ca I	20	10	-	-	5259.099	Sm	4	-	-	-	5250.487	Ce	6	-	-	-
5265.517	I	-	[20]	-	Ke	5259.040	Mo	60	20	-	-	5250.465	Os	8	-	-	-
5265.160	Cr I	15	-	-	-	5258.75	Hf	2	-	-	Me	5250.38	Eu	2	-	-	Kn
5265.150	Os	30	-	-	-	5258.392	Dy	3	-	-	-	5250.38	Er	8	-	-	Ed
5265.140	Re	3 h	-	-	-	5258.358	Th	6	-	-	-	5250.34	Zr I	2	-	-	-
5265.01	Er	12	-	-	Ed	5258.333	So I	12	15	-	-	5250.339	Mo	10	2	-	-
5264.95	Hf II	50	80	-	Me	5258.19	Yb	5	-	-	Me	5250.211	Fe I	30	-	-	-
5264.92	Tb	15	-	-	Ed	5257.916	Sm II	3	-	-	-	5250.140	Ce	6	-	-	-
5264.796	Fe II	-	4	-	Kn	5257.857	La I	5	-	-	-	5249.998	Co I	200 w	-	-	-
5264.713	I	-	[8]	-	Ke	5257.624	Co I	400 w	-	-	-	5249.84	Yb	-	8	-	Me
5264.47	Er	12	-	-	Ed	5257.604	Ti I	8	-	-	-	5249.835	Pr	6	-	-	-
5264.415	Re	8	-	-	-	5257.492	Yb	15	100	-	-	5249.63	Dy	3 h	-	-	Ed
5264.399	Sm	5	-	-	-	5257.480	Er	12	-	-	-	5249.618	Ce	12	-	-	-
5264.33	Te	-	[8]	-	Bi	5257.479	Pt	10	-	-	-	5249.585	Nd	60	-	-	-
5264.328	V I	6	1	-	-	5257.36	C II	-	15	-	FI	5249.373	Cs II	-	-	[80]	Sv
5264.246	Co I	15	-	-	-	5257.102	Sm	3	-	-	-	5249.294	Nd	2	-	-	-
5264.240	Ca I	15	8	-	-	5257.075	Ru I	25	-	-	-	5249.20	A I	-	-	[40]	Ms
5264.224	Nd	2	-	-	-	5257.044	U	15	18	-	-	5249.183	Ce	10	-	-	-
5264.213	Ce	10	-	-	-	5257.02	Er	20	-	-	-	5249.112	Eu	60	-	-	-
5264.152	Cr I	100 r	20	-	-	5256.903	Sr	90	25	-	-	5249.09	Fe I	4 h	-	-	Ri
5264.14	Mg II	2	5	-	FI	5256.75	Tb	10	-	-	Ed	5249.06	Kr II	-	-	[4 h]	Me
5264.04	Zr I	2	-	-	Ke	5256.75	Kr II	-	[30]	-	Me	5249.05	Br	-	-	[30]	Bi
5263.995	V	-	5 h	-	Me	5256.36	Te	-	[25]	-	BI	5248.98	Xe I	-	-	[4 h]	Me
5263.96	Ra	-	[25]	-	Rs	5256.175	Pd I	12	-	-	-	5248.855	Re	25	-	-	-
5263.954	Ru	5	-	-	-	5256.075	Eu	20	-	-	-	5248.74	Rh I	3	-	-	Me
5263.878	Pr	25	2	-	-	5255.955	Er	50	-	-	-	5248.71	Tb	25	-	-	Ed
5263.874	Fe	7	-	-	-	5255.826	Ti I	40	80	-	-	5248.677	Er	12	-	-	-
5263.809	Gd	10	-	-	-	5255.823	Os	20	-	-	-	5248.615	Eu	80	-	-	-
5263.750	Cr	4	-	-	HI	5255.821	Gd	12	-	-	-	5248.52	In	-	5	-	Sq
5263.73	Sr II	2	-	-	Sd	5255.68	Yb	-	8	-	Me	5248.50	Zr I	2	-	-	-
5263.61	Yb	-	10	-	Me	5255.510	Nd	50	3	-	-	5248.402	Ti I	4	-	-	-
5263.502	Ti I	30	-	-	-	5255.417	W	20	-	-	-	5248.011	Zr I	2	-	-	-
5263.330	Fe I	300	-	-	-	5255.325	Mn	50	-	-	-	5247.932	Co I	500 w	-	-	-
5263.316	Ti I	2	-	-	-	5255.132	Cr I	20	3	-	-	5247.75	Xe	-	-	[50]	Hu
5263.264	Sm	4	-	-	-	5254.961	Fe I	50	-	-	-	5247.749	U	12	10	-	-
5263.209	W	15	-	-	-	5254.93	P	-	[15]	-	Gu	5247.71	Er	8	-	-	Ed
5263.04	Eu	30	-	-	Kn	5254.918	Cr I	18	-	-	-	5247.653	Ta	20	-	-	-
5263.02	A	-	[2]	-	Ms	5254.90	Tm	3	10	-	Me	5247.652	Th	20 d	3	-	-
5262.587	Ru	5	-	-	-	5254.84	Ce	12	-	-	-	5247.564	Cr I	60	15	-	-
5262.38	In I	12	-	-	Ps	5254.759	Gd	15	-	-	-	5247.424	Ce	5	-	-	-
5262.248	Ca I	20	8	-	-	5254.650	Co I	200 w	-	-	-	5247.42	Ca	4	3	-	Ad
5262.11	Tb	40	-	-	Ed	5254.542	W	18	-	-	-	5247.385	Cb	30	2	-	-
5262.104	Ti II	-	3 h	-	-	5254.49	Hf	2	-	-	Me	5247.379	W	7	-	-	-
5261.95	Xe II	-	[200]	-	Hu	5254.476	A I	-	[60]	-	Ms	5247.352	U	6	6	-	-
5261.95	Rh	3	-	-	Me	5254.28	Tb	10	-	-	Ed	5247.310	Ti I	25	1	-	-
5261.82	Au I	40	3	-	MI	5253.97	In I	30	-	-	Ps	5247.10	Hf II	40	60	-	Me
5261.754	Cr I	25	-	-	-	5253.928	Cb	20	8	-	-	5247.063	Fe I	50	10	-	-
5261.711	Ce	12	-	-	-	5253.807	Ba	9	-	-	Sz	5246.87	Gd	20	-	-	Ed
5261.704	Ca I	20	6	-	-	5253.796	Sm	4	-	-	-	5246.76	A I	-	-	[5]	Ms
5261.569	Mo	3 h	2 h	-	-	5253.63	Se II	-	[100]	-	BI	5246.574	Ti I	10	-	-	-
5261.558	Ta	2 h	-	-	-	5253.55	C II	-	5	-	FI	5246.24	A I	-	-	[40]	Ms
5261.40	Er	8	-	-	Ed	5253.480	Fe I	70	-	-	-	5246.148	Ti I	15	-	-	-
5261.140	Mo	20	15	-	-	5253.48	P II	-	[300 w]	-	Gu	5246.12	Er	20	-	-	-

5245.9—5222.3 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
5245.920	Ce	30	-	5238.197	Mo	80 h 30 h	-	5229.863	Sm	4	-
5245.696	I II	-	[80]	5238.11	Tb	15	-	5229.86	A I	-	[40] Ms
5245.595	Sm	4	-	5238.108	Sm	5	-	5229.749	Ce	18	-
5245.55	Eu	8 h	-	5238.09	Fe	4 h	-	5229.58	Cu II	-	3 Sh
5245.510	Mo	25	2 d	5238.07	Te	-	[15] Bl	5229.572	Sm	3	-
5245.36	Cu II	-	10	5237.967	Mo	15	10	5229.52	Kr II	-	[60] Me
5245.277	Ce	10	-	5237.91	Th	10	-	5229.374	Cb	3	1
5245.27	Xe I	-	[4 h]	5237.805	Rh	8	-	5229.320	Er	30	-
5245.25	Kr	-	[4 whs]	5237.75	Er	8	-	5229.270	Sr	70	8
5245.17	Se II	-	[35]	5237.62	Se II	-	[5] Bl	5229.118	W	7	1 h
5245.13	Br I	-	[20]	5237.598	Sm	10	3	5229.01	I	-	[20] Ke
5244.777	Ta	40 w	-	5237.48	Cb	8	5	5228.781	Sm	60	-
5244.68	Hf	2	-	5237.370	Cb	5	5	5228.56	Yt I	4	-
5244.65	Yb	-	10	5237.34	Cr II	2	8	5228.427	Nd	6	-
5244.506	Ce	20	-	5237.156	Rh I	100	2	5228.413	Fe	15 h	6 h
5244.342	Re	20	-	5237.091	Co	5	-	5228.4	bh V	10	-
5244.21	Te	-	[8]	5237.050	Ce	6	-	5228.213	Tm	8	15
5244.107	Yb	50	5	5236.836	Cb	3	4	5228.205	Yb	5	-
5243.99	Hf	15	2	5236.68	Yb	-	7 h	5228.18	Kr I	-	[20] Me
5243.789	Fe I	20	-	5236.668	Re	20 w	-	5228.12	Tb	40	-
5243.75	Se II	-	[8]	5236.246	Dy	3	-	5228.082	Cr	18	-
5243.692	Ir	2	-	5236.21	A I	-	[20] Ms	5228.005	Pr	15	-
5243.685	Pr	3	-	5236.197	Fe	6	-	5227.695	V	-	10 Me
5243.57	Tb	15	-	5236.119	Eu	25	-	5227.66	Pt	80	2 Me
5243.52	Er	12	-	5235.52	F	-	[70] Gu	5227.51	Se II	-	[600] Bl
5243.469	Zr I	4	-	5235.393	Ta	20 w	-	5227.295	Yb	10	-
5243.395	Cr I	50	-	5235.390	Fe I	35	-	5227.192	Fe I	400	60 S
5243.079	Ce	8	-	5235.35	Ni I	30	2	5227.187	Ti I	10	-
5242.987	W	25	1 h	5235.206	Co	100 w	-	5227.002	Cs II	-	[200] Sv
5242.952	Ru	6	-	5235.19	Se	-	[5] Bt	5226.90	Xe II	-	[5 hl] Hu
5242.812	Mo	50 h	20 h	5235.12	Hf	2	-	5226.891	Cr I	15	-
5242.682	Eu	30	-	5235.11	Tb	15	-	5226.875	Fe I	200	15
5242.63	P	-	[30]	5235.101	Cb	3	1	5226.62	Xe II	-	[10 hl] Hu
5242.495	Fe	125	5	5235.057	Zr I	2 h	-	5226.57	Os	3	-
5242.381	Ru I	10	-	5234.860	Pd I	50	2	5226.555	Ti II	30	50 h
5242.355	Cr	2	-	5234.80	Ir	2 h	-	5226.216	La II	6	20 l
5242.197	Zr I	2	-	5234.75	Sm II	2	-	5226.19	Yb	-	4 Me
5242.13	A I	-	[2]	5234.74	A I	-	[5] Ms	5226.06	Er	12	-
5242.088	Th	3	-	5234.63	I I	-	[80] Ke	5225.821	Cr	15	-
5241.940	Zr I	2	-	5234.627	Fe II	5	-	5225.767	V I	40	40 Me
5241.779	U	6	-	5234.328	Re	25 W	-	5225.61	Th	3	-
5241.59	Ce	5	-	5234.274	La I	200 r	8 W	5225.58	Rh I	10	-
5241.507	Cb	5	2 h	5234.265	Mo	25	15	5225.531	Fe I	60	-
5241.458	Cr	12	-	5234.195	Nd	50	-	5225.155	Cb	15	5
5241.412	U	3	2	5234.175	Sm	50 d	-	5225.113	Sr	70	8
5241.29	Kr II	-	[2 hl]	5234.164	U	8	-	5225.05	Kr II	-	[3] Me
5241.203	V	-	3 h	5234.070	V I	40	40	5225.045	Nd	5	-
5241.20	Os	5	-	5234.028	Ne I	-	[50] IMe	5225.032	Cr I	6	1
5241.096	A I	-	[60 h]	5234.014	Ce	8	-	5225.000	U	6	6
5240.880	Mo	80 h	40 h	5233.962	Gd	20	-	5224.954	Ti I	90	6
5240.872	V I	50	50	5233.961	Rb I	15	-	5224.941	Cr I	18	4
5240.84	Yt	5	-	5233.888	Eu	30	-	5224.926	Zr I	10	-
5240.815	Yt I	20	-	5233.817	Ti I	35	-	5224.72	Eu	4 h	-
5240.744	W	6	-	5233.752	V I	12	12	5224.697	Re	25 w	-
5240.502	Yb	10	40	5233.539	W	12	-	5224.667	W	50	8
5240.468	Cr I	20 h	-	5233.440	Ta	2 wh	-	5224.665	Sm	5	-
5240.41	Eu	2 h	-	5233.42	Er	8	-	5224.564	Ti I	30	2
5240.391	Cb	5	2	5233.296	Sm	4	2	5224.56	Kr II	-	[7] Me
5240.310	Mo	6	1	5233.23	Os	5	-	5224.541	Cr I	12	-
5240.198	V I	8	8	5233.226	Th	12	3	5224.318	Ti I	70	8
5240.194	Th	10	1	5232.940	Fe I	800	150	5224.284	U	4	3
5239.942	Ti I	3	-	5232.89	Os	5	-	5224.137	Ru I	15	-
5239.823	Sc II	30	125	5232.864	Ce	15	-	5224.082	Cr I	12	-
5239.792	Nd	15	-	5232.809	Cb	50	10	5223.87	Se II	-	[8] Bt
5239.78	Eu	2 h	-	5232.362	Mo	20	10	5223.82	Sn	-	2 Ar
5239.774	W	9	-	5232.163	U	2	-	5223.641	Ti I	50	1
5239.71	A I	-	[2]	5232.06	Kr	-	[2] Me	5223.630	Zr I	8	-
5239.68	Er	8	-	5232.016	Th	5	-	5223.57	Kr I	-	[5] Me
5239.56	La I	5	-	5231.83	Ca	-	4	5223.553	Ru	20	-
5239.360	U	3	-	5231.74	Se	-	[8] Bt	5223.478	Eu	700	-
5239.3	bh C	70	-	5231.50	As II	-	60	5223.472	Ce	20	-
5239.218	Eu	80	-	5231.159	Th	12	-	5223.342	Ti	3	-
5239.20	Er	8	-	5231.065	Mo	20	15	5223.279	Pr	3	-
5238.971	Cr I	60	-	5230.802	Ta	60 w	-	5223.27	As II	-	15 Ro
5238.94	Sb II	-	[50 wh]	5230.625	Rh I	25	1	5223.193	Fe	6	-
5238.815	Th	3	-	5230.372	Ir	2	-	5223.053	Eu	8	-
5238.7	Hg II	-	[4]	5230.272	Pr	10 w	-	5222.948	Ce	2	-
5238.69	As II	-	12	5230.264	Au I	40	15	5222.90	A I	-	[20] Ma
5238.613	U	6	6	5230.228	Cr I	18	-	5222.81	Hg II	-	[80] Pa
5238.580	Ti I	50	100	5230.217	Co I	300 R	-	5222.693	Ti I	35	2
5238.551	Sr	90	15	5230.177	Mo	4	-	5222.676	Cr I	18	-
5238.487	Ce	12	-	5230.170	Ru	6	2	5222.663	Rh I	30	1
5238.47	Pt	2 h	-	5230.15	Kr II	-	[3 h] Me	5222.6	bh F	2	-
5238.416	Pd I	2 h	-	5230.142	Ce	8	-	5222.483	Co I	50	-
5238.23	Br II	-	[100]	5229.967	Fe I	200	15 h	5222.38	Kr I	-	[3] Me

Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R
5222.351	Ne I	-	-	[50]	IMe	5214.368	Pr	3	-	-	-	5208.04	A I	-	-	[10]	Ms
5222.28	Eu	2 h	-	-	Kn	5214.36	Er	8	-	-	Ed	5207.974	W	5	-	-	-
5222.199	Sr	70	8	-	-	5214.337	Ne I	-	-	[35]	Ps	5207.97	Tb	15	-	-	Ed
5222.13	Re	6	-	-	-	5214.304	Dy	6	-	-	-	5207.905	Pr	15	1	-	-
5221.99	Tb	15	-	-	Ed	5214.3	bh F	2	-	-	L	5207.893	Eu	20 h	-	-	-
5221.920	Ce	2	-	-	-	5214.28	Tb	15	-	-	Ed	5207.869	Ti I	25	-	-	-
5221.890	U	8	-	-	-	5214.187	W	12	2	-	-	5207.8	bh F	2	-	-	L
5221.8	bh F	2	-	-	-	5214.15	Th	4	-	-	-	5207.786	U	4	-	-	-
5221.753	Cr	25	-	-	L	5214.127	Cr	18	-	-	-	5207.677	V I	8	8	-	-
5221.574	Nd	4	-	-	-	5214.08	I I	-	-	[20]	Ke	5207.638	Sm	3	-	-	-
5221.340	Cl II	-	-	[70]	Mu	5214.077	Ru I	4	-	-	-	5207.344	Ce	8	-	-	-
5221.319	Sm	8	-	-	-	5213.655	V I	35	35	-	-	5207.17	A I	-	-	[10]	Ms
5221.270	A I	-	-	[500]	IMe	5213.428	Ru	10	-	-	-	5207.151	Sm II	25 d	-	-	-
5221.132	Re	3 h	-	-	-	5213.39	Tm	10	1	-	Me	5207.128	Cu II	-	20	-	Sh
5221.107	Sm	8	-	-	-	5213.368	Eu	150	-	-	-	5206.951	Rh I	6	1	-	-
5220.912	Cr	10	-	-	-	5213.36	Rh I	5	-	-	Me	5206.9	bh F	2	-	-	L
5220.307	Ni I	15	-	-	-	5213.358	Th	4	-	-	-	5206.659	Th	4	1	-	-
5220.27	Gd	20	-	-	Ed	5213.232	Nd	5	-	-	-	5206.61	O II	-	-	[60]	Mh
5220.113	Pr	80	3	-	-	5213.17	Xe	-	-	[2 h]	Hu	5206.608	V I	25	25	-	-
5220.070	Cu I	100	-	-	IBu	5213.023	Ti	10	-	-	-	5206.565	Ne I	-	-	[3]	Ps
5219.706	Ti I	60	2	-	-	5212.980	Sr	10	-	-	-	5206.562	Pr	30	2	-	-
5219.67	So I	10	12	-	Me	5212.922	Er	20	-	-	-	5206.55	Ta	2	-	-	Ks
5219.46	Te	-	-	[8]	Bl	5212.794	W	20	5	-	-	5206.519	Er	20	-	-	-
5219.421	Eu	4	-	-	-	5212.780	Cu I	4	-	-	Hx	5206.490	Th	6	-	-	-
5219.405	Mo	25	20	-	-	5212.741	Ta	60	-	-	-	5206.47	Lu	10	-	-	Me
5219.40	Gd	25	-	-	Ed	5212.729	Rh I	15	1	-	-	5206.430	Eu	40	-	-	-
5219.30	A I	-	-	[40]	Ms	5212.711	Co I	300 w	-	-	-	5206.29	Ti II	-	-	[2]	Ei
5219.209	Eu	12	-	-	-	5212.61	S II	-	-	[20]	Ig	5206.273	Ta	5 w	-	-	-
5219.112	Th	8	-	-	-	5212.495	Pr	3	-	-	-	5206.186	W	30	-	-	-
5219.095	Cb	100	10	-	-	5212.365	Nd	30	-	-	-	5206.083	Ti I	40	1	-	-
5219.053	Pr	50	2	-	-	5212.345	W	9	-	-	-	5206.039	Cr I	500 R	200	-	-
5219.05	Si	-	2	-	Sy	5212.287	Ti	15	-	-	-	5206.0	bh Mg	3	-	-	L
5219.027	Co I	10	-	-	-	5212.257	Zr	3	-	-	-	5205.93	Ra I	-	-	[250]	Re
5218.9	Hg I	-	-	[10]	Wd	5212.240	V	8 h	8 h	-	-	5205.79	A I	-	-	[10]	Ms
5218.660	Ta	40	-	-	-	5212.239	Cr I	4 h	-	-	-	5205.779	Th	8	1	-	-
5218.528	Th	10	2	-	-	5212.2	bh Zr	8	-	-	L	5205.719	Yt II	50	80	-	-
5218.465	Cb	3	1	-	-	5212.189	Sm	6	-	-	-	5205.54	I II	-	-	[8]	Bl
5218.462	Ta	40 l	-	-	-	5211.99	Tb	10	-	-	Ed	5205.521	Ce	8	-	-	-
5218.428	W	7	3	-	-	5211.921	Ce	50 s	-	-	-	5205.40	As	-	12	-	Ro
5218.398	Sm	25	-	-	-	5211.917	Pr	3 d	-	-	-	5205.395	Sm	15	2	-	-
5218.25	Er	30	-	-	-	5211.870	La I	300 r	5	-	-	5205.179	U	10	6 h	-	-
5218.23	Re	2 h	-	-	-	5211.864	Mo	20	12	-	-	5205.154	W	-	6	-	-
5218.21	Ga II	-	-	[10]	Sy	5211.821	Co I	100	-	-	-	5205.142	Ce	10	-	-	-
5218.202	Cu I	700	-	-	IBu	5211.726	Sm	5	-	-	-	5205.130	Cb	8	5	-	-
5218.178	W	6	-	-	-	5211.63	Er	4	-	-	-	5204.78	Hg	-	-	[40]	Ps
5218.16	Cl II	-	-	[4]	Mu	5211.60	Yb	40	-	-	-	5204.726	Ce	8 w	-	-	-
5218.114	Ru	10	-	-	-	5211.544	Ti II	10	15 h	-	-	5204.583	Fe I	125	-	-	-
5218.084	Sm	8 d	-	-	-	5211.516	Rh I	8	1	-	-	5204.518	Cr I	400 R	100	-	-
5217.98	Yb	-	-	7 h	Me	5211.5	Cs	-	-	[15]	Dr	5204.514	W	40	-	-	-
5217.93	Kr II	-	-	[12]	Me	5211.235	Th	6	-	-	-	5204.51	Tm	6	10	-	Me
5217.924	Fe	6	-	-	-	5211.234	Cb	3	1	-	-	5204.381	Nd	2	-	-	-
5217.92	Cl II	-	-	[100]	Mu	5211.21	Tb	10	-	-	Ed	5204.316	U	10	10	-	-
5217.83	La	2 h	10 h	-	Me	5211.16	Er	12	-	-	Ed	5204.274	Ce	10	-	-	-
5217.49	Gd	25	-	-	Ed	5211.043	Ce	8	-	-	-	5204.20	I I	-	-	[50]	Ev
5217.45	Re	2	-	-	-	5210.99	Gd	12	-	-	Ed	5204.155	La II	50	300	-	-
5217.45	Kr II	-	-	[30]	Me	5210.842	Co I	50	-	-	-	5204.033	Cb	3	1	-	-
5217.398	Fe I	150	3	-	-	5210.79	Hg	-	-	[60]	Ps	5203.943	Mo	12	5	-	-
5217.35	Cl II	-	-	[4]	Mu	5210.754	Sm	8	-	-	-	5203.895	Ne I	-	-	[150]	IMe
5217.021	Eu	125	-	-	-	5210.69	Sb	-	-	4 h	Sp	5203.865	Th	5	-	-	-
5216.948	U	8	-	-	-	5210.573	Ne I	-	-	[90]	IMe	5203.668	Sm	3	-	-	-
5216.84	A II	-	-	[10]	Rt	5210.522	So I	20	-	-	-	5203.329	Rh I	8	-	-	-
5216.761	Pr	8	-	-	-	5210.488	A I	-	-	[200]	Ms	5203.279	Ce	8	-	-	-
5216.590	Th	12	2	-	-	5210.439	Mo	15	4	-	-	5203.259	W	30	-	-	-
5216.588	V I	40	40	-	-	5210.389	Ti I	200	35	-	-	5203.232	Os	12	-	-	-
5216.494	Ni I	10	-	-	-	5210.28	Er	12	-	-	Ed	5203.224	Cb	15	8	-	-
5216.428	Sm	5	-	-	-	5210.057	Co	100	-	-	-	5202.85	Si	-	2	-	Sy
5216.39	Hg	-	-	[20]	Ps	5209.928	Sm	20	-	-	-	5202.77	Tb	15	-	-	Ed
5216.384	Ce	8	-	-	-	5209.904	Nd	2	-	-	-	5202.733	Sm II	50	-	-	-
5216.28	A I	-	-	[60]	Ms	5209.62	Cs	-	-	[15]	Sv	5202.634	Os	30 h	-	-	-
5216.278	Fe I	300	10	-	S	5209.501	Ru	7	-	-	-	5202.594	Ce	5	-	-	-
5216.26	I II	-	-	[5]	K	5209.44	Cs	-	-	[15]	Sv	5202.464	Ce	6	-	-	-
5215.926	V	-	-	8	Me	5209.34	Tb	15	-	-	Ed	5202.356	Sm	3	-	-	-
5215.81	Kr I	-	-	[8]	Me	5209.299	Zr I	5	-	-	-	5202.339	Fe I	300	10	-	S
5215.788	Ir	2 h	-	-	-	5209.29	Bi II	-	-	600 h	Om	5202.122	Ru	12	-	-	-
5215.654	Nd	5	-	-	-	5209.105	W	10	-	-	-	5201.88	Xe II	-	-	[5 wh]	Hu
5215.609	Sm	15	-	-	-	5209.067	Ag I	1500 R	1000 R	-	-	5201.71	N I	-	-	[10]	Du
5215.58	Er	8	-	-	Ed	5208.914	Pd I	10	-	-	-	5201.56	Kr II	-	-	[2 h]	Me
5215.56	As	-	-	6	Ro	5208.901	Ce	2	-	-	-	5201.452	Sm	10	-	-	-
5215.45	Yb	-	-	5 h	Me	5208.863	Ne I	-	-	[70]	IMe	5201.444	Pb	10	2 h	-	Hx
5215.185	Fe I	200	5	-	-	5208.80	Sb	-	-	[8]	Lg	5201.436	W	10	-	-	-
5215.13	Er	20	-	-	-	5208.8	Bi II	5 wh	70	-	MI	5201.42	Xe II	-	-	[15]	Hu
5215.088	Eu	1000	-	-	-	5208.601	Fe I	200	8	-	-	5201.389	Ce	15	-	-	-
5214.787	Rh I	10	-	-	-	5208.59	Pt	2	-	-	Me	5201.35	S II	-	-	[10]	Ig
5214.768	A I	-	-	[200]	Ms	5208.436	Cr I	500 R	100	-	-	5201.146	Zr I	7	-	-	-
5214.727	Re	10	-	-	-	5208.32	Kr II	-	-	[500]	Me	5201.096	Ti I	30	-	-	-

5201.0—5179.4 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5201.01	B ₁ II	—	30	—	Om	5193.448	Cb	3	2	—	—	5186.4	bh F	5	—	—	L
5201.00	S II	—	[10]	—	Ig	5193.4	bh F	2	—	—	—	5186.336	Ti I	20	—	—	—
5200.925	Eu	300	—	—	—	5193.224	Ne I	—	[150]	IMe	—	5186.16	Tb	15	—	—	Ed
5200.87	Cu I	5 wh	—	—	Sh	5193.21	Si	2	—	Sy	—	5186.147	Re	2	—	—	—
5200.807	Re	2 h	—	—	—	5193.137	Rh	200	3	—	—	5185.90	Ti II	8	35 h	—	Ri
5200.744	Mo	20	10	—	—	5193.130	Ne	—	[150]	IMe	—	5185.89	Re	2	—	—	—
5200.591	Sm	200	1	—	—	5193.075	Cb	100	20	—	—	5185.85	Xe I	—	[2 h]	—	Me
5200.55	Yb	2	10	—	—	5193.054	Sm	5	1	—	—	5185.688	Tm	5	10	—	—
5200.5	bh F	2	—	—	L	5192.993	V I	100	75 h	—	—	5185.64	Si	—	2	—	Sy
5200.418	Ce	12 w	—	—	—	5192.975	Ti I	150	25	—	—	5185.6	bh F	5	—	—	L
5200.408	Yt II	60	150	—	—	5192.88	Dy	15	—	—	—	5185.237	Tm	5	—	—	—
5200.337	V	8	8	—	—	5192.723	W	30	—	—	—	5185.213	I II	—	[30]	—	Ke
5200.22	Kr II	—	[60 whs]	—	Me	5192.72	A I	—	[60]	Ms	—	5185.154	Dy	3	—	—	—
5200.188	Cr I	30	—	—	—	5192.621	Nd	40	—	—	—	5185.023	Rh I	8	—	—	—
5200.168	Mo	40	20	—	—	5192.6	bh F	2	—	L	—	5185.0	bh Zr	30	—	—	L
5200.122	Ce	6	—	—	—	5192.524	Ni I	10	—	—	—	5184.97	N II	—	[15]	—	Fl
5200.119	Nd	10	—	—	—	5192.357	Fe I	400	50	—	—	5184.726	Th	3	—	—	—
5199.942	W	7	—	—	—	5192.351	Co I	100 w	—	—	—	5184.660	In II	—	[70]	—	Ps
5199.893	Re	15 w	—	—	—	5192.10	Xe II	—	[50]	Hu	—	5184.590	Cr I	60	1	—	—
5199.867	Ru	20	—	—	—	5192.008	V I	18	15	—	—	5184.587	U	12	15	—	—
5199.846	Eu	500	—	—	—	5192.000	Cr I	50	—	—	—	5184.585	Ni I	50	—	—	—
5199.727	Nd	4	—	—	—	5192.0	bh Mg	3	—	L	—	5184.48	Xe II	—	[40]	—	Hu
5199.7	bh F	2	—	—	L	5191.675	Ce	30 wh	—	—	—	5184.438	In II	—	[300]	—	Ps
5199.33	Br	—	[30]	—	Bl	5191.657	Er	8	—	—	—	5184.292	Fe I	20	—	—	—
5199.28	Eu	4	—	—	Kn	5191.600	Zr II	5	10	—	—	5184.274	Eu	2	—	—	—
5199.113	Th	4	—	—	Fd	5191.524	U	6	—	—	—	5184.194	Rh I	100	1	—	—
5198.96	A I	—	[2]	—	Ms	5191.50	La	4	3 h	—	Me	5184.181	Yb	8	30	—	—
5198.88	I	—	[25]	—	Bl	5191.467	Fe I	400	35	—	—	5184.034	Ru	4	—	—	—
5198.86	Tb	15	—	—	Ed	5191.448	Nd	40	—	—	—	5183.986	Th	6	1	—	—
5198.837	Fe	10	—	—	—	5191.40	P II	—	[100]	Gu	—	5183.972	W	20	—	—	—
5198.832	Th	15	—	—	—	5191.4	Pb II	—	[2]	Ea	—	5183.923	La I	25	—	—	—
5198.784	Sn	—	5	—	Ar	5191.37	Xe II	—	[200]	Hu	—	5183.88	Br	—	[10]	—	Bl
5198.714	Fe I	80	—	—	S	5191.335	Pr	20	1	—	—	5183.848	Pr	5	—	—	—
5198.563	Mo	5	3	—	—	5191.327	Ne I	—	[35]	Ps	—	5183.82	Cb	5 h	1	—	—
5198.067	Nd	2	—	—	—	5191.07	Gd	30	—	Ed	—	5183.72	Ti I	8	—	—	—
5197.874	W	3	—	—	—	5190.870	Th	10	1	—	—	5183.705	Zr I	6	—	—	—
5197.77	Gd	25	—	—	Ed	5190.76	Tb	10	—	Ed	—	5183.618	Mg I	500 wh	300	—	—
5197.663	Dy	10	—	—	—	5190.519	U	2	1	—	—	5183.610	Co	35	—	—	—
5197.590	Fe II	—	10	—	Kn	5190.45	O II	—	[30]	Mh	—	5183.606	Eu	4	—	—	—
5197.55	Rh I	3	—	—	Me	5190.445	Sm II	5	—	—	—	5183.422	La II	300	400	—	—
5197.216	Mn	10	—	—	—	5190.42	N II	—	[15]	Fl	—	5183.364	Cu II	—	20	—	Sh
5197.165	Ni I	10	—	—	—	5190.34	La	4 h	—	Me	—	5183.33	Cb	5 h	1	—	—
5196.872	Mo	5	2	—	—	5189.885	U	3	4	—	—	5183.21	N II	—	[15]	—	Fl
5196.76	Tb	10	—	—	Ed	5189.839	Eu	10	—	—	—	5183.197	Ce	10	—	—	—
5196.62	Si	—	2	—	Sy	5189.70	Cl II	—	[25]	Ks	—	5183.10	Ti II	—	[10]	—	El
5196.61	Lu	10	—	—	Me	5189.681	Th	6	1	—	—	5183.01	Se II	—	[15]	—	Bl
5196.591	Mn	30	—	—	—	5189.51	N	—	[5]	Du	—	5182.603	Nd	8	—	—	—
5196.496	W	5	—	—	—	5189.38	I	—	[2]	Bl	—	5182.524	Th	5	2	—	—
5196.443	Cr I	50	3	—	—	5189.217	U	2	—	—	—	5182.36	Br II	—	[100]	—	Bl
5196.43	Yt II	5	10	—	Me	5189.2	Pb	—	20	Ro	—	5182.32	As II	—	30	—	Ro
5196.412	Sm	3	—	—	—	5189.197	Cb	80	12	—	—	5182.282	Os	5	—	—	—
5196.31	Tb	10	—	—	Ed	5188.934	Ta	12	—	—	—	5182.225	Ru	5	—	—	—
5196.15	Hg II	—	[20]	—	Ps	5188.888	Er	30	—	—	—	5182.13	Si	—	3 wh	—	Sy
5196.098	Fe	25 h	—	—	—	5188.861	W	10	—	—	—	5181.995	Zn I	200	2	—	Hz
5196.091	Yb	20	3	—	—	5188.850	Ca I	50	6 w	—	—	5181.95	Ti II	—	[10]	—	El
5195.837	Cb	30	10	—	—	5188.700	Ti II	80	100	—	—	5181.935	Ce	10	—	—	—
5195.814	Th	5	—	—	—	5188.652	Ce	10	—	—	—	5181.86	Hf	25	10	—	Me
5195.601	Nd	2	—	—	—	5188.612	Ne I	—	[150]	IMe	—	5181.80	N I	—	[15]	—	Ry
5195.481	Pr	20	—	—	—	5188.59	Te	—	[8]	Bl	—	5181.761	Re	25	—	—	—
5195.478	Fe I	100 h	—	—	—	5188.580	U	2	—	—	—	5181.750	Co	5	—	—	—
5195.363	V I	40	25	—	—	5188.576	Eu	4	—	—	—	5181.591	Mo	—	20	—	Wn
5195.307	Pr	20	1	—	—	5188.477	Dy	3	—	—	—	5181.165	Nd	5	—	—	—
5195.273	Rb I	20 h	—	—	IRz	5188.371	Th	6	—	—	—	5181.08	Tb	10	—	—	Ed
5195.110	Pr	10	1	—	—	5188.239	Pr	3	—	—	—	5181.014	Eu	4	—	—	—
5195.019	Ru I	100	—	—	—	5188.229	La II	50	500	—	—	5181.0	N I	—	[5]	—	Ry
5194.980	Ce	5	—	—	—	5188.11	Xe II	—	[100]	Hu	—	5180.985	Ta	2	—	—	—
5194.948	Fe I	200	15	—	—	5187.864	Sm II	3	—	—	—	5180.961	Er	8	—	—	—
5194.92	Xe II	—	[10 wh]	—	Hu	5187.85	Gd	15	—	Ed	—	5180.894	U	8	—	—	—
5194.832	V I	30	—	—	—	5187.75	Hf II	20	30	Me	—	5180.890	Ce	15	—	—	—
5194.77	A I	—	[20]	—	Ms	5187.746	A I	—	[800]	IMe	—	5180.760	V I	8	8	—	—
5194.750	Ce	8	—	—	—	5187.68	Se II	—	[18]	Bl	—	5180.680	U	4	—	—	—
5194.723	Sm	10	—	—	—	5187.536	W	4	—	—	—	5180.584	Ir	2 h	—	—	—
5194.57	Hf II	3	6	—	Me	5187.452	Ce	50	—	—	—	5180.36	Yb	2	10	—	Me
5194.413	Pr	20	—	—	—	5187.445	Th	4	—	—	—	5180.34	N II	—	[5]	—	Fm
5194.043	Ti I	10	—	—	—	5187.24	Gd	15	—	Ed	—	5180.306	Cb	150	15	—	—
5194.02	A I	—	[5]	—	Ms	5187.210	Sm	2	—	—	—	5180.216	Mo	12	4	—	—
5193.90	Pt	3	—	—	—	5187.079	Sm	3	—	—	—	5180.058	Fe	10	—	—	—
5193.89	Br	—	[10]	—	Bl	5187.053	Nd	2	—	—	—	5179.975	Mo	10	3	—	—
5193.87	Yb	4 h	—	—	Me	5187.032	Zr I	3	—	—	—	5179.91	Gd	20	—	—	Ed
5193.820	Th	8	1	—	—	5186.99	Kr II	—	[60 whs]	Me	—	5179.781	Nd	25	—	—	—
5193.731	Eu	20	—	—	—	5186.984	Cb	50	10	—	—	5179.5	bh F	5	—	—	L
5193.617	V I	30	12	—	—	5186.91	Gd	20	—	Ed	—	5179.50	N II	—	[70]	—	Fl
5193.525	Os	30	—	—	—	5186.84	Hf	4	—	Me	—	5179.490	W	8	1 h	—	—
5193.518	Sm	3	2	—	—	5186.592	Ni I	6	—	—	—	5179.48	Er	8	—	—	Ed
5193.488	Cr	15	—	—	—	5186.442	Re	2	—	—	—	5179.458	Ce	3	—	—	—

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5179.405	Mo	5	1	-	-	5173.15	Cl II	-	[25]	-	Ks	5165.159	Co I	30	-	-	-
5179.36	Sb	-	2 h	-	Sp	5173.13	Yb	1	15 h	-	Me	5165.140	Nd	10	-	-	-
5179.208	Sm	3	-	-	-	5172.99	Te	-	[15]	-	Bl	5165.0	bh F	5	-	-	L
5179.136	Ni I	4	-	-	-	5172.941	Mo	70 h	25 h	-	-	5164.970	Pt	2	-	-	-
5179.133	La I	5	-	-	-	5172.924	La II	5	20 i	-	-	5164.885	V I	15 h	15 h	-	-
5178.987	Zr I	2	-	-	-	5172.761	Er	12	-	-	-	5164.78	Ir	2 h	-	-	-
5178.910	Re	100 W	-	-	-	5172.742	Sm	80	1	-	-	5164.761	Er	30	-	-	-
5178.9	Te I	-	[4]	-	Rd	5172.72	Re	2	-	-	Me	5164.72	Sb II	-	[15]	-	Lg
5178.84	Gd	20	-	-	Ed	5172.699	Mg I	200 wh	100 wh	-	-	5164.703	Zr	2	-	-	-
5178.82	Xe II	-	[50]	-	Hu	5172.688	Co	10	-	-	-	5164.614	Fe	70 h	-	-	-
5178.78	Fe	2	-	-	-	5172.46	Sb II	-	[15]	-	Lg	5164.612	Sm	3	-	-	-
5178.750	Nd	10	-	-	-	5172.377	Re	2	-	-	-	5164.604	U	2	1 h	-	-
5178.701	Eu	8	-	-	-	5172.36	Kr I	-	[2]	-	Me	5164.592	Rb II	-	5	-	Rr
5178.688	Ce	10	-	-	-	5172.32	N II	-	[5]	-	Fl	5164.56	Hf II	3	8	-	Me
5178.625	Ti I	8	-	-	-	5172.093	V I	18 h	18 h	-	-	5164.43	Hf	4	-	-	Me
5178.6	bh F	5	-	-	L	5171.8	bh F	2	-	-	L	5164.40	Br II	-	[20]	-	Bl
5178.58	Ge II	-	100	-	Lg	5171.72	Os	8	-	-	Me	5164.386	Ce	12	-	-	-
5178.49	Th	3	-	-	-	5171.632	Ta	20	-	-	-	5164.377	Cb	150	20	-	-
5178.40	Tb	10	-	-	Ed	5171.599	Fe I	300	60 h	-	S	5164.27	Tb	10	-	-	Ed
5178.216	Cb	3	1	-	-	5171.54	Se II	-	[18]	-	Bl	5164.157	U	15	1	-	-
5178.178	Rh I	5	-	-	-	5171.46	N II	-	[5]	-	Fl	5164.10	Rh I	3	-	-	Me
5178.131	I	-	[25]	-	Ke	5171.246	Mo	12	4	-	-	5164.00	Te	-	[8]	-	Bl
5178.058	Sm	100 d	-	-	-	5171.1	bh Sc	4	-	-	Me	5163.845	Er	12	-	-	-
5177.977	Eu	6	-	-	-	5171.076	Mo	30 h	6 h	-	-	5163.842	Pd I	300	8	-	-
5177.947	Ir	8	2	-	-	5171.028	Ru I	150	-	-	-	5163.8	Pb II	-	[25]	-	Ea
5177.730	Ce	8	-	-	-	5170.75	Fe	4 h	-	-	-	5163.779	Eu	3	-	-	-
5177.725	W	6	-	-	-	5170.736	Sm	5	2	-	-	5163.68	Gd	15	-	-	Ed
5177.71	Kr II	-	[6 whs]	-	Me	5170.694	Mo	5	1	-	-	5163.649	Ta	40	-	-	-
5177.63	Th	2	-	-	-	5170.61	Tb	10	-	-	Ed	5163.615	La II	25	40	-	-
5177.535	A I	-	[40]	-	Ms	5170.492	Eu	4	-	-	-	5163.474	Ne I	-	[10]	-	Ps
5177.448	Ba	4	2	-	-	5170.23	Th	6	-	-	-	5163.446	Th	12	-	-	-
5177.430	Cr I	50 i	-	-	-	5170.18	Hf	10	5	-	Me	5163.192	Mo	25	20	-	-
5177.4	bh Mg	2	-	-	L	5170.13	Tb	10	-	-	Ed	5162.860	Sm	15	3	-	-
5177.369	Pr	5	-	-	-	5170.08	N II	-	[5]	-	Fl	5162.840	W	3	-	-	-
5177.311	La I	150	30	-	-	5169.939	V I	18	18	-	-	5162.80	A II	-	[2]	-	Rt
5177.267	Rh I	25	-	-	-	5169.9	Bi II	2	12	-	MI	5162.78	N	-	[5]	-	Du
5177.239	Fe	4	-	-	-	5169.756	Eu	4	-	-	-	5162.711	Xe I	-	[10]	-	IMe
5177.09	Mo	5	1	-	-	5169.718	Ce	15	-	-	-	5162.68	La II	2	3	-	Me
5176.965	Th	10	-	-	-	5169.699	Dy	8	-	-	-	5162.5	bh Mg	2	-	-	L
5176.791	Nd	4	-	-	-	5169.651	Rb I	5	-	-	IRz	5162.39	Eu	3	-	-	Kn
5176.766	V	60	50	-	-	5169.602	Sm	50 d	-	-	-	5162.34	Cl II	-	[10]	-	Ks
5176.565	Ni I	70	2	-	-	5169.45	N II	-	[5]	-	Du	5162.3	bh Pb	8	-	-	L
5176.55	Sb II	-	[50]	-	Lg	5169.320	Eu	6	-	-	-	5162.288	Fe I	300 h	-	-	-
5176.51	Tb	10	-	-	Ed	5169.12	Tb	10	-	-	Ed	5162.284	A I	-	[500]	-	IMe
5176.483	V I	8	8	-	-	5169.027	Fe II	2	200 h	-	-	5162.27	P	-	[30]	-	Gu
5176.411	Eu	6	-	-	-	5168.975	Os	8	-	-	-	5162.15	Hg II	-	[5]	-	Nu
5176.38	P	-	[70]	-	Gu	5168.971	La I	3	-	-	-	5162.073	W	9	-	-	-
5176.28	Gd	30	-	-	Ed	5168.901	Fe I	80	-	-	S	5162.060	Sm II	4	-	-	-
5176.28	A II	-	[10]	-	Rt	5168.660	Ni I	70	-	-	-	5161.97	P	-	[30]	-	Gu
5176.078	Co I	500 r	-	-	-	5168.345	Sm	6	-	-	-	5161.814	Ta	80 w	-	-	-
5175.98	Se II	-	[600]	-	Bl	5168.314	Pr	3	-	-	-	5161.765	Cr	18	-	-	-
5175.969	Rh	200	1	-	-	5168.24	N II	-	[5]	-	Fl	5161.743	Pr	40	1	-	-
5175.89	N II	-	[30]	-	Fl	5168.226	Eu	4	-	-	-	5161.706	Nd	3	-	-	-
5175.89	Cu II	-	2	-	Sh	5168.06	Kr I	-	[4]	-	Me	5161.655	Re	25	-	-	-
5175.86	O II	-	[15]	-	Mh	5167.923	Nd	5	-	-	-	5161.566	La	3 h	-	-	-
5175.85	Cl II	-	[20]	-	Ks	5167.791	La I	20	-	-	-	5161.545	Th	2	-	-	-
5175.833	Pr	10 w	1	-	-	5167.757	Mo	25	20	-	-	5161.484	Ce	30	-	-	-
5175.698	W	6	-	-	-	5167.491	Fe I	700	150	-	S	5161.358	Pd I	4	-	-	-
5175.619	Ba	10	7	-	Sz	5167.42	Hf	3	-	-	Me	5161.25	As	-	30	-	Ro
5175.558	In II	-	[150]	-	Ps	5167.343	Mg I	100 wh	50	-	-	5161.188	I II	-	[300]	-	Ke
5175.422	In II	-	[300]	-	Ps	5167.28	La II	3	10	-	Me	5161.161	Sm	3	-	-	-
5175.418	Sm	60	1	-	-	5167.271	Sm	3	-	-	-	5160.998	Dy	3	-	-	-
5175.40	I I	-	[8]	-	Db	5167.187	Eu	4	-	-	-	5160.988	Zr I	6	-	-	-
5175.292	In II	-	[400]	-	Ps	5166.902	Th	3 W	2 h	-	-	5160.88	Gd	15	-	-	Ed
5175.186	Pr	30 w	1	-	-	5166.844	Dy	4	-	-	-	5160.695	Th	12	2	-	-
5175.137	W	6	-	-	-	5166.80	Kr II	-	[80]	-	Me	5160.572	Sm	10 d	-	-	-
5174.889	Eu	8	-	-	-	5166.788	Ta	30	-	-	-	5160.409	Eu	6	-	-	-
5174.74	I	-	[2]	-	Bl	5166.716	Eu	125	-	-	-	5160.40	Tb	10	-	-	Ed
5174.71	Rh	3	-	-	Me	5166.38	Hf	2	-	-	Me	5160.35	Rh I	4	-	-	Me
5174.622	U	2 h	2	-	-	5166.32	Sb II	-	[30 wh]	-	Lg	5160.333	Cb	200	15	-	-
5174.540	Ce	25	-	-	-	5166.296	Fe I	125	-	-	-	5160.326	U	18	20	-	-
5174.529	V I	10 h	10 h	-	-	5166.227	Cr	80	2	-	-	5160.322	Er	12	-	-	-
5174.46	N II	-	[5]	-	Fl	5166.087	Nd	4	-	-	-	5160.070	Eu	200	-	-	-
5174.337	U	8	-	-	-	5166.065	Co I	10	-	-	-	5159.998	Ru I	12	-	-	-
5174.205	Cb	3	2	-	-	5166.046	Sm II	125 d	-	-	-	5159.919	Ba	50 h	10	-	Sz
5174.198	Th	5	-	-	-	5165.961	Zr I	7	-	-	-	5159.88	O II	-	[40]	-	Mh
5174.178	Mo	70 h	25 h	-	-	5165.9	bh F	5	-	-	L	5159.77	Tb	10	-	-	Ed
5173.991	Eu	4	-	-	-	5165.82	A II	-	[20]	-	Rt	5159.69	A I	-	[10]	-	Ms
5173.898	Pr	100	4	-	-	5165.8	Hg I	-	[5]	-	Wd	5159.689	Ce	30	-	-	-
5173.854	La II	20	25 h	-	-	5165.46	Sr I	15	-	-	Fl	5159.516	Sm II	15	-	-	-
5173.748	Ti I	125	20	-	-	5165.424	Fe I	50	-	-	-	5159.347	V I	40	40	-	-
5173.701	Ca	3	-	-	-	5165.41	Rh I	15	-	-	Me	5159.31	Tb	10	-	-	Ed
5173.635	Sm	3	-	-	-	5165.373	Dy	3	-	-	-	5159.3	bh F	5	-	-	L
5173.37	N II	-	[15]	-	Fl	5165.2	bh C	-	-	-	L	5159.210	Pr	3	-	-	-
5173.16	F II	-	[15]	-	Di	5165.171	Re	3	-	-	-	5159.053	Fe	35 h	-	-	-

5158.8—5139.5 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5158.894	Ne I	-	[50]	Ps	-	5152.30	Sb II	-	[12]	Lg	-	5145.604	Re	15	-	-	-
5158.842	Co I	40	-	-	-	5152.21	Pr	15 w	-	-	-	5145.543	Os	15	-	-	-
5158.79	Cl II	50	-	[8]	Ka	5152.200	Ti I	90	2	-	-	5145.512	Co I	80 w	-	-	-
5158.693	La I	40	-	-	-	5152.20	P II	-	[50]	Gu	-	5145.468	Ti I	100	4	-	-
5158.69	Rh	80	1	-	Me	5152.14	Ti II	-	50 w	El	-	5145.464	Zr I	10	-	-	-
5158.666	Zr I	3	-	-	-	5152.094	Rb II	-	100	Rr	-	5145.422	La I	100	10	-	-
5158.607	Th	12	-	-	-	5152.013	Os	7	-	-	-	5145.385	Mo	25	20	-	-
5158.6	Sb II	-	12	-	Dv	5152.01	Kr	-	-	[3 hl]	Me	5145.36	A	-	[200]	Rt	Me
5158.431	Co I	40	-	-	-	5151.963	Ne I	-	-	[75]	IMe	5145.28	Kr II	-	[4]	-	-
5158.4	bh F	5	-	L	-	5151.950	Sm	4	-	-	-	5145.203	Dy	3	-	-	-
5158.187	Al II	-	[5]	Sy	-	5151.914	Fe I	70	-	-	-	5145.16	C II	-	70	-	Fl
5158.178	W	8	-	-	-	5151.9	bh F	2	-	L	-	5145.138	Ce	4	-	-	-
5158.090	Co II	-	10	-	Sh	5151.862	Th	2	-	-	-	5145.122	Ne I	-	[35]	-	Ps
5158.037	Cb	3	1	-	-	5151.783	Nd	5	-	-	-	5145.098	Fe I	10	4	-	-
5158.001	Zr I	10	1	-	-	5151.620	Th	4	-	-	-	5145.097	U	4	-	-	-
5157.993	Ni I	8	-	-	-	5151.395	A I	-	[200]	Ms	-	5145.04	Kr I	-	[2 h]	-	Me
5157.96	Hf	12	10	-	Me	5151.361	Pr	3	-	-	-	5145.028	Th	5	-	-	-
5157.884	Sm	3	-	-	-	5151.08	C II	-	30	Fl	-	5145.011	Ne I	-	[500]	-	Ps
5157.57	Tb	15	-	-	Ed	5151.067	Ru I	40	-	-	-	5144.998	Al II	-	[5]	-	Sy
5157.557	Sm	3	-	-	-	5150.890	Mn	40	-	-	-	5144.97	Rh I	3	-	-	Me
5157.508	Os	7	-	-	-	5150.852	Ta	15 l	-	-	-	5144.947	Sm	4	-	-	-
5157.487	Cb	4	8	-	-	5150.843	Fe I	150	-	S	-	5144.938	Ne I	-	[500]	-	IMe
5157.431	La II	40	100	-	-	5150.821	Eu	14	-	-	-	5144.900	Er	8	-	-	-
5157.223	Sm	10	-	-	-	5150.635	Cb	10	3	-	-	5144.875	Al II	-	[2]	-	Sy
5157.09	Rh	25	-	-	Me	5150.526	U	2	1	-	-	5144.672	Cr I	30	-	-	-
5157.043	Sm II	10	-	-	-	5150.439	Sm	3	-	-	-	5144.528	U	6	-	-	-
5157.031	V I	15	15	-	-	5150.405	Ce	10	-	-	-	5144.484	Ba II	2	300 h	-	Om
5156.741	La II	40	40	-	-	5150.12	Tb	15	-	Ed	-	5144.413	Al II	-	[2]	-	Sy
5156.74	Gd	20	-	-	Ed	5150.077	Ne I	-	[35]	Ps	-	5144.395	W	-	6	-	-
5156.72	P	-	[50]	Gu	-	5150.033	Ir	2 h	-	-	-	5144.132	Er	12	-	-	-
5156.664	Ne I	-	[50]	IMe	-	5149.990	Ce	12	-	-	-	5144.12	Co I	5 wh	-	-	Sh
5156.562	Ta	80 W	-	-	-	5149.90	Te	-	[8]	Bl	-	5143.922	Th	3	-	-	-
5156.488	Pr	20 w	-	-	-	5149.872	Pr	5	-	-	-	5143.687	Ta	30	-	-	-
5156.45	I II	8	-	[25]	Bl	5149.789	Co I	100	-	-	-	5143.58	Ti II	-	5	-	MI
5156.410	Eu	-	-	-	-	5149.736	Os	80	-	-	-	5143.576	Er	12	-	-	-
5156.344	Co I	300 w	-	-	-	5149.732	I	-	[8]	Bl	-	5143.49	C II	-	15	-	Fl
5156.311	Ta	12	-	-	-	5149.652	Mo	4	1	-	-	5143.46	Br	-	[15]	-	Bl
5156.3	bh Zr	2	-	-	L	5149.645	Ce	10	-	-	-	5143.403	Ir	3	-	-	-
5156.257	Re	25 w	-	-	-	5149.61	Kr II	-	[3 hl]	Me	-	5143.332	Nd	8	1	-	-
5156.205	Mo	10	1	-	-	5149.563	Nd	10	-	-	-	5143.285	Sm	12	-	-	-
5156.066	Sr I	80	18	-	-	5149.41	P	-	[15]	Gu	-	5143.285	Os	7	-	-	-
5156.06	Hf II	1	5	-	Me	5149.383	Tm	10	15	-	-	5143.265	Ne I	-	[5]	-	Ps
5155.95	Tb	10	-	-	Ed	5149.37	Er	12	-	Ed	-	5143.264	Th	10	-	-	-
5155.853	Sm	10	-	-	-	5149.30	Eu	10	-	Kn	-	5143.14	Pb	-	4 h	-	Ed
5155.84	Gd	25	-	-	Ed	5149.261	U	2	-	-	-	5143.05	Kr II	-	[600 hl]	-	Me
5155.8	Pb II	-	[25]	Ea	-	5149.13	Mn	8	-	-	-	5142.940	Fe I	125	-	-	-
5155.764	Ni I	80	1	-	-	5149.090	Na I	400	-	Me	-	5142.83	Tb	10	-	-	Ed
5155.54	Rh I	150	1	-	Me	5148.779	Ta	7 l	-	-	-	5142.771	Ni I	100	-	-	-
5155.47	Tb	15	-	-	Ed	5148.721	V I	60	60	-	-	5142.763	Ru I	25	-	-	-
5155.449	Zr I	15	-	-	-	5148.7	Te I	-	[8]	Rd	-	5142.7	Kr I	-	[4]	-	Me
5155.407	Eu	16	-	-	-	5148.438	Mo	8	4	-	-	5142.65	Gd	15	-	-	-
5155.38	Pt	15	-	-	Me	5148.411	V I	8 h	3 h	-	-	5142.540	Fe I	100 h	-	-	Ed
5155.312	Dy	5	-	-	-	5148.41	Eu	8	-	Kn	-	5142.406	U	8	-	-	-
5155.263	Mo	10	1	-	-	5148.258	Fe I	35	-	-	-	5142.31	Yb	-	5 h	-	Me
5155.140	Ni I	50	-	-	-	5148.215	Th	12	3	-	-	5142.263	Cr I	12	-	-	-
5155.136	Ru I	125	-	-	-	5148.052	Fe I	20	-	-	-	5142.247	Mo	10	2	-	-
5155.06	I	-	[15]	Bl	-	5147.974	Cb	3 h	1	-	-	5142.14	Se II	-	[500]	-	Bl
5155.016	Sm II	125	1	-	-	5147.782	Eu	6	-	-	-	5141.89	S	-	[8]	-	Ms
5154.889	W	6	-	-	-	5147.58	Tb	15	-	Ed	-	5141.83	Ta	7	-	-	Ks
5154.84	P	-	[10]	Gu	-	5147.549	Ce	15	-	-	-	5141.81	A I, II	-	[20]	-	Ms
5154.68	Cd I	6 r	-	-	Ps	5147.538	Cb	30	5	-	-	5141.747	Fe I	100	100 h	-	-
5154.64	Hf	2 d	-	-	Me	5147.52	I	-	[2 h]	Ke	-	5141.620	Ta	40	-	-	-
5154.447	W	8	-	-	-	5147.482	Ti I	90	3	-	-	5141.49	P	-	[50]	-	Gu
5154.422	Ne I	-	[50]	IMe	-	5147.455	Pr	4	-	-	-	5141.49	Gd	20	-	-	Ed
5154.388	Ce	10	-	-	Ab	5147.39	Au I	40	5	MI	-	5141.285	Re	8	-	-	-
5154.271	Sm	125 d	1	-	-	5147.388	Mo	25	20	-	-	5141.262	Mo	12	5	-	-
5154.247	Th	8	-	-	-	5147.237	Ru I	60	-	-	-	5141.248	W	8	-	-	-
5154.076	Ti II	10	15 h	-	-	5147.026	Yb	3	50	-	-	5141.2	Sb	-	40	-	Sp
5154.053	Co I	200 W	-	-	-	5146.997	U	5	-	-	-	5141.08	Tb	15	-	-	Ed
5153.874	W	7	1 h	-	-	5146.9	bh Mg	2	-	L	-	5141.059	Eu	6	-	-	-
5153.645	Na I	600	-	-	Me	5146.880	Re	25 w	-	-	-	5140.84	Gd	25	-	-	Ed
5153.533	W	9	3	-	-	5146.86	Os	5	-	Me	-	5140.719	Th	6	-	-	-
5153.449	Nd	4	-	-	-	5146.744	Co I	400 w	-	-	-	5140.689	Cb	3	2	-	-
5153.417	Ta	15	-	-	-	5146.72	Eu	3	-	Kn	-	5140.575	Cb	10	5	-	-
5153.34	Rh I	2	-	-	Me	5146.703	Mo	5	2	-	-	5140.503	Ce	10	-	-	-
5153.235	Cu I	600	-	-	IBu	5146.478	Ni I	150	1	-	-	5140.416	U	3	1	-	-
5153.205	Ru I	7	-	-	-	5146.408	Eu	8	-	-	-	5140.38	Cl I	-	[2]	-	Ks
5153.12	Hf	3	1	-	Me	5146.26	Hg	-	[30]	Ps	-	5140.259	Tm	5	5	-	-
5153.11	A I	-	[20]	Ms	-	5146.06	O I	-	[70]	Ps	-	5140.10	Hg I	-	[5]	-	Wd
5153.031	Cb	8	2	-	-	5146.024	Eu	4	-	-	-	5140.04	Re	10	-	-	-
5152.8	bh F	2	-	L	-	5145.90	Tb	10	-	Ed	-	5139.987	U	4	-	-	-
5152.629	Cb	100	10	-	-	5145.797	Sm	9	-	-	-	5139.799	Pr	15	1	-	-
5152.578	Sm	3	-	-	-	5145.772	W	18	-	-	-	5139.760	Ce	10	-	-	-
5152.378	U	2	-	-	-	5145.70	Eu	2	-	Kn	-	5139.654	Cr	50	1	-	-
5152.34	Yb	-	5 h	Me	-	5145.654	Al II	-	[8 d]	Sy	-	5139.594	Dy	10	-	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5139.526	V I	50	50	-	-	5131.474	Fe I	125	-	-	-	5124.09	Ti I	10	-	-	-
5139.480	Fe I	200	40	-	-	5131.397	Eu	2	-	-	-	5124.087	U	3	-	-	-
5139.35	Tb	10	-	-	Ed	5131.078	Th	10	1	-	-	5123.828	Mo	12	5	-	-
5139.35	U	2	-	-	-	5130.99	Te	-	[15]	Bl	-	5123.785	Nd	30	1	-	-
5139.260	Fe I	125	-	-	-	5130.915	Pt	3	-	-	-	5123.728	Ru I	7	-	-	-
5139.255	Ni I	50	-	-	-	5130.847	U	3	3	-	-	5123.723	Fe I	200	-	-	S
5139.21	C II	-	5	-	Fl	5130.820	Eu	3	-	-	-	5123.68	Ag	4	30	-	Kp
5139.146	La	4	-	-	-	5130.8	bh F	2	-	-	L	5123.68	Gd	20	-	-	Ed
5138.5	Eu	3	-	-	Kn	5130.76	Rh I	20	-	-	Me	5123.661	Ir	10	-	-	-
5138.421	V I	50	50 h	-	-	5130.596	Nd	40	2	-	-	5123.465	Cr I	8	-	-	-
5138.397	W	20	-	-	-	5130.53	O I	-	[30]	Ps	-	5123.381	Os	8	-	-	-
5138.2	bh Pb	3	-	-	L	5130.53	Tb	10	-	-	Ed	5123.325	U	2	-	-	-
5138.09	Hg I	-	[10]	-	Wd	5130.522	V	-	2	-	-	5123.3	bh F	2	-	-	L
5138.018	Ce	12	-	-	-	5130.451	Eu	3	-	-	-	5123.21	Yt II	10	30	-	Me
5137.762	Ce	10	-	-	-	5130.363	In II	-	[15]	Ps	-	5123.16	Kr II	-	[15 whl]	Me	-
5137.76	Ca	2 h	2	-	-	5130.26	Gd	20	-	-	Ed	5122.990	La II	150	200	-	-
5137.528	Ru	4	-	-	-	5130.112	W	15	-	-	-	5122.768	Co I	150	-	-	-
5137.52	Eu	4	-	-	Kn	5130.088	Eu	20	-	-	-	5122.674	Ce	12	-	-	Ab
5137.396	Cb	5	1	-	-	5129.939	In II	-	[70]	Ps	-	5122.552	U	5	4	-	-
5137.388	Fe I	200 h	-	-	-	5129.894	Ir	2 h	-	-	-	5122.42	Xe II	-	[150]	-	Hu
5137.385	Sm	4	-	-	-	5129.830	Dy	3	-	-	-	5122.393	Ce	12 w	-	-	-
5137.117	Ce	12	-	-	-	5129.806	W	7	-	-	-	5122.337	Ne I	-	[150]	-	Ps
5137.075	Ni I	150	1	-	-	5129.763	In II	-	[30]	Ps	-	5122.257	Ne I	-	[150]	-	IMe
5136.9	bh F	2	-	-	L	5129.743	Cb	3 h	1	-	-	5122.229	Os	25	-	-	-
5136.795	Fe II	3	100	-	-	5129.658	Fe I	4	-	-	-	5122.136	Sm	80	-	-	-
5136.777	Zr I	2	-	-	-	5129.578	Ce	30	-	-	-	5122.121	Cr I	20	-	-	-
5136.676	W	7	-	-	-	5129.535	U	2	2	-	-	5122.09	Ti I	6	-	-	-
5136.550	Ru I	125	-	-	-	5129.520	Pr	100	-	-	-	5121.88	A I	-	[5]	-	Ma
5136.467	Ta	60	40	-	-	5129.383	Ni I	80	-	-	-	5121.800	Cb	15	5	-	-
5136.144	Zr	2	-	-	-	5129.3	bh C	-	-	-	L	5121.774	Mo	12	4	-	-
5136.02	Gd	20	-	-	Ed	5129.149	Ti II	30	30 h	-	-	5121.69	C II	-	3	-	Fl
5135.980	Yb	6	50	-	-	5129.082	Eu	200	-	-	-	5121.629	In II	-	[30]	-	Ps
5135.898	Os	5	-	-	-	5129.0	bh F	2	-	-	L	5121.61	Tb	15	-	-	Ed
5135.835	Sm	4	-	-	-	5128.966	Ir	2 h	-	-	-	5121.61	Yb	1	15	-	Me
5135.58	Gd	15	-	-	Ed	5128.830	W	6	-	-	-	5121.570	Ni I	20	-	-	-
5135.5	bh F	5	-	-	L	5128.739	Sm	8	2	-	-	5121.498	In II	-	[30]	-	Ps
5135.475	Cb	3	1	-	-	5128.54	Yb	-	5 h	-	Me	5121.339	In II	-	-	-	Ps
5135.445	La	3 h	-	-	-	5128.530	V I	75	75 h	-	Me	5121.154	In II	-	[15]	-	Ps
5135.433	Eu	8	-	-	-	5128.53	Hf II	10	20	-	Me	5121.120	Sm	15	3	-	-
5135.318	Ce	8 w	-	-	-	5128.486	W	8	-	-	-	5121.098	In II	-	[400]	-	Ps
5135.20	Yt I	7	2	-	Me	5128.45	Hg II	-	[150]	Ps	-	5120.963	In II	-	[150]	-	Ps
5135.125	Pr	50	2	-	-	5128.067	Tm	2	3	-	-	5120.950	Sn	-	2	-	Ar
5135.09	Lu	200	20	-	Me	5127.895	Eu	4	-	-	-	5120.875	La I	6	-	-	-
5135.016	Dy	3	-	-	-	5127.78	A I	-	[60]	Ms	-	5120.855	In II	-	[100]	-	Ps
5134.967	Mo	10	2	-	-	5127.760	U	2	-	-	-	5120.770	Ce	15	-	-	-
5134.898	Os	7	-	-	-	5127.711	Pd I	8	-	-	-	5120.745	Cu II	-	20	-	Sh
5134.750	Cb	200	15	-	-	5127.660	Cb	10	3	-	-	5120.69	Rh I	20	-	-	Me
5134.465	Ce	12	-	-	-	5127.397	Er	25	-	-	-	5120.55	Hg I	-	[20]	-	Wd
5134.428	Zr	2	-	-	-	5127.367	Ti I	12	-	-	-	5120.534	In II	-	[30]	-	Ps
5134.31	Se II	-	[35]	-	Bl	5127.363	Fe I	100	-	-	S	5120.524	W	9 i	-	-	-
5134.17	A I	-	[2]	-	Ms	5127.257	Ru I	20	-	-	-	5120.512	Ru	4	-	-	-
5134.05	Lu	20	2	-	Me	5127.2	bh F	5	-	-	L	5120.506	Ne I	-	[25]	-	Ps
5134.013	Ru I	6	-	-	-	5127.113	Sm II	5	-	-	-	5120.425	Ti I	100	4	-	-
5133.9	bh F	5	-	-	L	5127.111	Mo	4	2	-	-	5120.422	Zr I	10	-	-	-
5133.886	Ru	15	-	-	-	5126.80	Yb	4	-	-	Me	5120.324	Re	40	-	-	-
5133.827	Er	40	-	-	-	5126.725	Mo	10	5	-	-	5120.298	Cb	50	10	-	-
5133.7	bh Sc	5	-	-	Me	5126.69	Re	50 w	-	-	-	5120.18	Tb	10	-	-	Ed
5133.680	Fe I	200 h	1 h	-	-	5126.213	Fe I	5 h	-	-	-	5120.12	P II	-	[5]	-	Gu
5133.485	Eu	150	-	-	-	5126.195	Co I	200	-	-	-	5120.01	Dy	8	-	-	Ed
5133.449	Co I	50 w	-	-	-	5126.13	S II	-	[8]	Bl	-	5119.638	Er	8	-	-	-
5133.423	Pr	60	1	-	-	5126.05	Zr	2	-	-	-	5119.55	C II	-	15	-	Fl
5133.401	Zr I	8	-	-	-	5126.00	Tb	10	-	-	Ed	5119.512	U	2	-	-	-
5133.336	Cb	10	3	-	-	5125.73	Kr II	-	[400 whl]	Me	-	5119.453	Eu	6	-	-	-
5133.3	bh Sc	3	-	-	Me	5125.70	Xe II	-	[50]	Hu	-	5119.3	Rn	-	[20]	-	Wa
5133.29	C II	-	15	-	Fl	5125.692	Co I	100 w	-	-	-	5119.285	I I	-	[500]	-	Ke
5133.23	Te	-	[8]	-	Bl	5125.558	Sm II	3	-	-	-	5119.243	U	2	-	-	-
5133.114	W	8 s	-	-	-	5125.54	Gd	50	-	-	Ed	5119.12	Yt II	7	20	-	Me
5133.02	Er	8	-	-	-	5125.493	U	5	-	-	-	5118.46	Hf	2	-	-	Me
5132.960	Ti I	12	-	-	-	5125.211	Ni I	50	-	-	-	5118.431	Pt	4	-	-	-
5132.96	C II	-	30	-	Fl	5125.18	As II	-	6	-	Ro	5118.408	W	7	-	-	-
5132.869	Zr I	3	-	-	-	5125.130	Fe I	100 h	-	-	-	5118.39	Tb	15	-	-	Ed
5132.41	Yb	2	5 h	-	Me	5125.1	bh F	2	-	-	L	5118.200	A I	-	[60]	-	Ms
5132.4	bh F	5	-	-	L	5125.009	Ce	10	-	-	-	5118.2	Bi II	-	25	-	MI
5132.365	Eu	10	-	-	-	5124.953	Zr II	-	2	-	-	5118.064	Cb	3	1	-	-
5132.330	Nd	10	1	-	-	5124.830	Sm	50	-	-	-	5118.021	Pr	4 w	-	-	-
5132.32	Ta	2 h	-	-	Ks	5124.772	Eu	60	-	-	-	5118.01	I I	-	[8]	-	Db
5132.262	Th	5	-	-	-	5124.767	Co I	25 h	-	-	-	5117.937	Mn	30	-	-	-
5132.21	Gd	20	-	-	Ed	5124.695	Cb	5	1	-	-	5117.77	Se	-	[25]	-	Bt
5132.199	U	4	-	-	-	5124.600	Re	20	-	-	-	5117.76	Xe	-	[3 h]	-	Hu
5132.193	Sm	10	-	-	-	5124.568	Er	8	-	-	-	5117.75	Yb	-	3 h	-	Me
5132.116	Ta	15	-	-	-	5124.56	I II	-	[5]	Mu	-	5117.604	W	10	-	-	-
5131.7	Ge II	-	100	-	Lg	5124.461	Cu II	-	20	-	Sh	5117.461	In II	-	[15]	-	Ps
5131.69	Tb	15	-	-	Ed	5124.349	Os	12	-	-	-	5117.412	In II	-	[300]	-	Ps
5131.529	Ir	3	-	-	-	5124.3	Bi II	-	100 wh	MI	-	5117.367	In II	-	[50]	-	Ps
5131.524	Er	8	-	-	-	5124.235	W	12	-	-	-	5117.272	Pr	4	-	-	-

5117.2—5095.1 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5117.252	Ta	30 W	-	-	-	5110.382	Pr	80	2	-	-	5103.135	La	3	-	-	-
5117.249	U	12	10	-	-	5110.357	W	20	-	-	-	5103.111	Nd	15	-	-	-
5117.175	Ce	20	-	-	-	5110.318	Dy	3	-	-	-	5103.04	Cl II	-	-	[125]	Ks
5117.156	Sm	80	1	-	-	5110.16	Zr I	2 h	-	-	-	5103.082	Sm II	150	-	-	-
5117.015	Pd I	50	4	-	-	5109.97	Rh I	10	-	-	Me	5102.971	Ni I	40	-	-	-
5117.011	Ne I	-	[35]	-	Ps	5109.81	Kr	-	[2]	-	Me	5102.86	Cl II	-	-	[30]	Mu
5116.967	Mo	12	5	-	-	5109.79	Tb	10	-	-	Ed	5102.79	Gd	8	-	-	Ed
5116.755	In II	-	[70]	-	Ps	5109.774	Ta	30 w	-	-	-	5102.42	Hg I	-	-	[10]	Wd
5116.740	Cb	8	1	-	-	5109.714	Mo	25	20	-	-	5102.417	Eu	4	-	-	-
5116.677	Sm II	100	1	-	-	5109.71	Sb II	-	[4]	-	Lg	5102.393	Nd	15	1	-	-
5116.503	Ne I	-	[150]	-	IMe	5109.6	Pb II	-	[6]	-	Ea	5102.38	Cb	20	2	-	-
5116.25	Tb	10	-	-	Ed	5109.59	Se II	-	[15]	-	Bl	5102.371	Sm	8	40	-	-
5115.911	In II	-	[100]	-	Ps	5109.509	W	3	-	-	-	5102.200	Fe I	80	-	-	-
5115.843	Ta	80	-	-	-	5109.5	P	-	[15]	-	Gu	5101.97	Tb	10	-	-	Ed
5115.750	Sm	10	1	-	-	5109.47	Ti I	15	-	-	Fl	5101.717	Ru I	7	-	-	-
5115.740	Eu	4	-	-	-	5109.440	Ti I	20	-	-	-	5101.68	Hf	2	-	-	Me
5115.644	Mo	8	2	-	-	5109.403	U	3	1	-	-	5101.60	Yb	-	-	4 h	Me
5115.634	Ce	10	-	-	-	5109.37	Ta	7 W	-	-	Ks	5101.387	Ru I	20	-	-	-
5115.628	In II	-	[30]	-	Ps	5109.360	In II	-	[300 w]	-	Ps	5101.381	W	5	-	-	-
5115.619	U	2 h	-	-	-	5109.258	Mo	10	1	-	-	5101.252	Eu	6	-	-	-
5115.47	Er	8	-	-	Ed	5109.149	Ir	2	-	-	-	5101.133	Er	8	-	-	-
5115.454	In II	-	[30]	-	Ps	5109.133	La I	4	-	-	-	5101.121	Sc I	12	12	-	-
5115.397	Ni I	80	5 wh	-	-	5109.11	Se II	-	[15]	-	Bl	5101.024	U	5	-	-	-
5115.357	Sm	5	-	-	-	5109.064	Sc	4	10	-	-	5100.96	Pd	20	-	-	Ed
5115.250	In II	-	[15]	-	Ps	5108.91	Gd	30	-	-	Ed	5100.91	Gd	-	-	[10]	Gu
5115.245	Zr I	10	-	-	-	5108.888	Co I	200 w	-	-	-	5100.700	Re	2	-	-	-
5115.224	Ce	12	-	-	-	5108.780	Re	20	-	-	-	5100.67	Hf	3	-	-	Me
5115.047	Th	10	-	-	-	5108.6	P	-	[15]	-	Gu	5100.625	Th	6	-	-	-
5115.028	Ce	4	-	-	-	5108.58	Xe II	-	[3 h]	-	Hu	5100.35	Sn	-	5	-	Ar
5115.023	In II	-	[15]	-	Ps	5108.56	Tb	15	-	-	Ed	5100.34	Al II	-	-	[5]	Sy
5114.974	Mo	20	12	-	-	5108.426	Pt	2	-	-	-	5100.335	Mo	6	2	-	-
5114.858	U	2	-	-	-	5108.331	Cu II	-	3	-	Sh	5100.305	Sm	60	-	-	-
5114.573	La II	150	200	-	-	5108.279	Sm	8	2	-	-	5100.198	Sm II	50	-	-	-
5114.571	W	3	-	-	-	5108.264	Os	3	-	-	-	5100.162	Cb	100	15	-	-
5114.531	Tm	10	15	-	-	5108.25	Th	4 w	1	-	-	5100.08	Cu II	-	10	-	Sh
5114.400	I	-	[25]	-	Ke	5107.979	Dy	3	-	-	-	5099.946	Ni I	150 w	-	-	-
5114.38	Pd I	6	-	-	-	5107.80	As II	-	150	-	Ro	5099.84	Tb	10	-	-	Ed
5114.363	Eu	150	-	-	-	5107.786	W	7	-	-	-	5099.64	A I	-	-	[5]	Ms
5114.07	C II	-	15	-	Fl	5107.645	Fe I	2	-	-	-	5099.59	Xe	-	-	[5 wh]	Hu
5114.037	Er	2 w	-	-	-	5107.585	Nd	20	1	-	-	5099.395	Ce	12	-	-	-
5113.959	Tm	5	3	-	-	5107.545	Tm	30 R	-	-	-	5099.322	Ni I	80	-	-	-
5113.888	Sm	15 d	4	-	-	5107.54	La II	2 h	6 h	-	Me	5099.30	Cl II	-	-	[100]	Ks
5113.86	Sb	-	70	-	Sp	5107.470	Ce	10	-	-	-	5099.27	Gd	10	-	-	Ed
5113.725	Zr	2	-	-	-	5107.452	Fe I	100	-	-	-	5099.228	Sc I	100 r	3	80	-
5113.70	Si	-	2	-	Sy	5107.43	Ir	3	-	-	-	5099.181	Ir	3	-	-	-
5113.675	Ne I	-	[75]	-	IMe	5107.342	U	6	6	-	-	5099.180	K I	25 l	-	-	Da
5113.57	Hf	4	-	-	Me	5107.203	Ce	10	-	-	-	5099.143	Ru I	5	-	-	-
5113.441	Ti I	80	2	-	-	5107.067	Ru I	40	-	-	-	5099.103	Cl II	-	-	[12]	Mu
5113.39	Th	6	-	-	-	5106.988	Sm	3	-	-	-	5099.042	Ne I	-	-	[25]	Ps
5113.36	Cl II	-	[40]	-	Ks	5106.749	U	4	-	-	-	5098.97	A	-	-	[20]	Ms
5113.34	Yb	3	-	-	Me	5106.637	Nd	8	-	-	-	5098.947	Ru	5	-	-	-
5113.232	Co I	100	-	-	-	5106.625	Sm	10 d	3	-	-	5098.712	Eu	15	-	-	-
5113.130	Cr I	25	-	-	-	5106.553	Ru	10	-	-	-	5098.710	Fe I	200	-	-	-
5113.12	Cl II	-	[8]	-	Mu	5106.441	Fe	25	-	-	Bu	5098.56	Zr	2	-	-	-
5112.852	Eu	4	10	-	-	5106.235	V	-	2 h	-	Me	5098.536	Eu	4	-	-	-
5112.824	Sc	4	-	-	-	5106.233	La I	100	10	-	-	5098.40	Gd	20	-	-	Ed
5112.688	Ce	20	-	-	-	5105.80	As II	-	150	-	Ro	5098.34	Cl II	-	-	[20]	Ks
5112.67	Se	-	[8]	-	Bl	5105.541	Cu I	500	-	-	IBu	5098.20	Tb	10	-	-	Ed
5112.490	Cr I	15	-	-	-	5105.529	Zr I	5	-	-	-	5098.046	Th	10	1	-	-
5112.295	Sm II	125	1	-	-	5105.476	W	15	-	-	-	5098.034	Mo	20	10	-	-
5112.272	Re	25	-	-	-	5105.354	Nd	10	-	-	-	5097.763	Cb	5	1	-	-
5112.270	Zr II	-	5	-	-	5105.211	Nd	5	1	-	-	5097.7	bh C	-	-	-	L
5112.204	K I	30 l	-	-	Da	5105.208	Ce	2	-	-	-	5097.56	Ra	-	-	[250]	Rs
5112.13	Hf	6	-	-	Me	5105.157	Re	20	-	-	-	5097.522	Mo	40	20	-	-
5112.12	Te	-	[8]	-	Bl	5105.144	V	40	40	-	-	5097.242	Ce	8	-	-	-
5111.95	P	-	[30]	-	Gu	5105.06	Yb	-	5	-	Me	5097.144	K I	25 h	-	-	Da
5111.931	Sm	4 d	-	-	-	5104.740	Os	8	-	-	-	5096.995	Fe I	35 h	-	-	-
5111.913	Cu I	15	-	-	IBu	5104.74	A I	-	[20]	-	Ms	5096.874	Ni I	50	-	-	-
5111.9	Pb II	-	[40]	-	Ea	5104.705	Ne I	-	[35]	-	IMe	5096.716	Sc I	12	15	-	-
5111.770	W	7	-	-	-	5104.701	Mo	3	1	-	-	5096.7	bh Sc	20	-	-	Me
5111.601	Ce	10	-	-	-	5104.626	Re	50 w	-	-	-	5096.647	Mo	30	20	-	-
5111.51	Yb	-	6 h	-	Me	5104.475	Sm II	125	1	-	-	5096.614	La	3 h	-	-	-
5111.148	Sm II	12	-	-	-	5104.45	N II	-	[15]	-	Fl	5096.604	Cs II	-	-	[40]	Sv
5111.0	Bi II	6	15	-	MI	5104.43	Yb	1	50	-	Me	5096.57	Se II	-	-	[350]	Bt
5110.966	Eu	2	-	-	-	5104.425	W	5	1	-	-	5096.524	Nd	8	-	-	-
5110.912	Cb	30	2	-	-	5104.3	bh V	7	-	-	L	5096.504	Re	100	-	-	-
5110.868	Th	10	2	-	-	5104.13	P	-	[30]	-	Gu	5096.484	Th	5	-	-	-
5110.85	F	-	[5]	-	Di	5104.08	Cl II	-	[25]	-	Ks	5096.415	Eu	30	-	-	-
5110.813	Pd I	100	2	-	-	5104.060	Sm II	15 d	-	-	-	5096.06	Gd	15	-	-	Ed
5110.768	Pr	80	3	-	-	5104.02	Tb	10	-	-	Ed	5095.888	Mo	20	10	-	-
5110.751	Cr I	40	-	-	-	5103.85	Cl II	-	[6]	-	Mu	5095.794	Pt	10	-	-	-
5110.703	U	4	-	-	-	5103.768	Th	6	2	-	-	5095.77	Re	15 w	-	-	-
5110.61	Hf II	-	7	-	Me	5103.718	U	2	-	-	-	5095.598	Cb	10	1	-	-
5110.527	Sm	4	3	-	-	5103.495	Oa	30	-	-	-	5095.299	Cb	50	30	-	-
5110.414	Fe I	300	-	-	S	5103.46	Gd	25	-	-	Ed	5095.124	Cb	3 h	3 h	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5095.064	Th	10	—	—	5087.425	Yt II	50	100	—	5079.65	Hf II	40	60	Me
5094.945	Co I	100	—	—	5087.366	Ta	60	—	—	5079.503	Bi	—	4	Om
5094.490	Cb	5	1	—	5087.18	Eu	4	—	Kn	5079.445	Ru I	4	—	—
5094.44	Eu	25	—	Kn	5087.148	Sc I	40	20	—	5079.393	La	6	—	—
5094.416	Ni I	—	—	—	5087.111	Pr	25	—	—	5079.27	P	—	[15]	Gu
5094.408	Cb	5	1	—	5087.087	A I	—	[60]	Ms	5079.236	Fe I	100	—	—
5094.339	Cb	5	1	—	5087.073	Sm II	30	—	—	5079.141	Th	5	—	—
5094.183	W	6	—	—	5087.068	Ti I	70	1	—	5079.088	Os	15	—	—
5094.030	Re	2 h	—	—	5086.99	Ti II	—	4	MI	5079.085	Nd	5	—	—
5093.88	Hf	5	2	Me	5086.951	Sc I	60	25	—	5079.016	Sm	4	2	—
5093.826	Ru	60	—	—	5086.918	W	3	—	—	5078.993	Fe I	20 h	—	—
5093.792	Cu II	—	20	Sh	5086.851	Ir	2 h	—	—	5078.964	Cb	300	50	—
5093.755	Er	8	—	—	5086.832	Cb	5 h	—	—	5078.923	La	5	—	—
5093.65	Al II	—	[10]	Sy	5086.765	Fe	2	100	—	5078.762	Ne I	—	[15]	Ps
5093.334	Ru	4	—	—	5086.71	La II	4	2	Me	5078.711	Cr	18	—	—
5093.32	A I	—	[10]	Ms	5086.567	Ce	6	—	—	5078.7	bh Yt	6	—	Me
5093.26	Se II	—	[50]	Bl	5086.52	Kr II	—	[250 hl]	Me	5078.54	Ti II	10	30 w	El
5093.185	Re	2 h	—	—	5086.24	La I	3	—	—	5078.420	Re	15	—	—
5093.112	U	3	—	—	5085.98	In	—	5	Sq	5078.338	Ce	5	—	—
5093.092	Os	5	—	—	5085.900	W	6 d	—	—	5078.254	Zr I	15	—	—
5093.091	Th	3	—	—	5085.863	U	10	6	—	5078.25	Cl II	—	[150]	Ka
5092.797	Nd	20	—	—	5085.824	Cd I	1000 wh	500	Hz	5078.25	Tb	25	—	Ed
5092.749	Mo	12 w	3	—	5085.74	Yb	—	4 h	Me	5078.19	Kr II	—	[2 whl]	Me
5092.664	Eu	20 w	—	—	5085.603	Eu	8	—	—	5078.065	Sm II	25 d	—	—
5092.38	Tb	10	—	Ed	5085.547	Sc I	80	70	—	5078.03	A I	—	[40]	Ms
5092.27	Eu	3	—	Kn	5085.52	Rh	10	—	Me	5078.005	Eu	15	—	—
5092.26	Mo	2	—	—	5085.479	Ni I	10	—	—	5077.9	bh Yt	4	—	Me
5092.25	Gd	30	—	Ed	5085.341	Ti I	20	—	—	5077.823	U	5	4	—
5092.224	Er	2	—	—	5085.260	Zr I	10	—	—	5077.81	Pt	5	—	—
5092.206	Dy	3 h	—	—	5085.12	Th	2	1	—	5077.805	Cu II	—	5	Sh
5092.164	Mo	6	—	—	5085.02	Al II	—	[25]	Sy	5077.66	Dy	5	—	—
5092.02	Xe II	—	[30 whl]	Hu	5084.842	Cb	5	1	—	5077.657	Er	12	—	—
5092.00	Si	—	2	Sy	5084.790	Ce	5	—	—	5077.608	Sm	3	—	—
5091.890	Cr I	25	3	—	5084.788	Sm	2	1	—	5077.59	Os	3	—	Me
5091.812	Sm	3	—	—	5084.667	W	3 h	—	—	5077.396	Eu	6	—	—
5091.751	Ce	15	—	—	5084.48	Rn	—	[300]	Wa	5077.395	Cb	8	3	—
5091.40	Eu	3	—	Kn	5084.23	Mo	10	3	—	5077.23	Kr II	—	[40]	Ma
5091.342	Mo	12	3	—	5084.212	K I	20 l	—	Da	5077.182	Tm	2	—	—
5091.305	U	2	1	—	5084.168	Ce	12	—	—	5077.162	Nd	3	—	—
5091.293	Bi II	2 h	30 wh	Om	5084.081	Ni I	300 w	2	—	5077.042	Mo	4	1	—
5090.966	Mo	20	6	—	5083.991	Cu II	—	15	Sh	5077.015	W	6	—	—
5090.864	Ce	3	—	—	5083.968	Ne I	—	[25]	Ps	5076.906	Os	5	—	—
5090.83	Dy	5	—	Ed	5083.713	Sc I	100	80	—	5076.767	U	50	1	—
5090.789	Fe I	40 h	—	—	5083.538	Ce	12	—	—	5076.760	Yb	5	—	—
5090.772	I I	—	[8]	Ke	5083.342	Fe I	200	—	S	5076.75	Tb	15	—	Ed
5090.759	Th	8	1	—	5083.341	Sm	9	30	—	5076.701	Pr	3	—	—
5090.710	Ta	60	—	—	5083.0	Te I	—	[10]	Rd	5076.682	Sm	10	—	—
5090.63	Rh I	150	1	Me	5082.74	A I	—	[20]	Ms	5076.599	Th	2	—	—
5090.615	Mo	10	3	—	5082.738	W	6	—	—	5076.586	Nd	25	—	—
5090.58	La II	3	2 h	—	5082.60	Yb	4	—	Me	5076.581	Ne I	—	[35]	Ps
5090.569	Re	10	—	—	5082.413	Ir	2 h	—	—	5076.474	Ce	10	1	—
5090.55	A II	—	[5]	Rt	5082.354	Ni I	100 w	—	—	5076.371	Ta	50	—	—
5090.378	Dy	5	—	—	5082.35	Pt	5	—	—	5076.321	Ni I	10	—	—
5090.321	Ne I	—	[8]	Ps	5082.253	Ta	30 W	—	—	5076.318	Ru I	40	—	—
5090.272	Er	8	—	—	5081.80	Tb	10	—	Ed	5076.280	Fe	3 h	—	—
5090.168	U	3	3	—	5081.773	Ca	—	[15]	Sv	5076.223	Os	8	—	—
5090.017	Sm	15 d	—	—	5081.554	Sc I	100	100	—	5076.173	Cu I	2 h	—	IBu
5089.973	W	7	—	—	5081.44	A I	—	[10]	Ms	5076.072	Ru I	15	—	—
5089.888	Sc I	12	15	—	5081.427	U	4	1	—	5075.974	Cb	5	2	—
5089.837	Nd	10	—	—	5081.360	Ne I	—	[15]	Ps	5075.92	Hf II	10	20	Me
5089.827	W	4	—	—	5081.260	Mo	20	5	—	5075.92	Kr II	—	[4 whl]	Me
5089.705	Sm II	15 d	—	—	5081.2	Pb II	—	[6]	Ea	5075.814	Sc I	12	12	—
5089.66	Tb	10	—	Ed	5081.111	Ni I	150 w	2	—	5075.681	Pr	12 w	—	—
5089.616	Zr	2	—	—	5081.07	Xe II	—	[25]	Hu	5075.663	V I	5	5	—
5089.221	Th	4	—	—	5081.03	Ra I	—	[50]	Rs	5075.471	Th	6	—	—
5089.12	Tb	40	—	Ed	5081.00	Yb	3	—	Me	5075.304	Ce	10	1	—
5089.12	Kr I	—	[2 h]	Me	5080.846	Sm	8 w	2	—	5075.226	Ce	6	—	—
5089.079	Eu	20	—	—	5080.719	W	10	—	—	5075.21	Zr	2	—	—
5088.968	Sm II	30	—	—	5080.62	Xe II	—	[500]	Hu	5074.935	Sm II	3	—	—
5088.956	Ni I	20	—	—	5080.523	Ni I	200 w	3	—	5074.794	Mn	15	—	—
5088.932	Cu II	—	10	Sh	5080.51	Er	8	—	Ed	5074.769	Os	12	—	—
5088.822	Cb	15	2	—	5080.495	U	3	—	—	5074.760	Fe I	.80	—	—
5088.78	Rh I	2	—	Me	5080.478	Ce	15	—	—	5074.751	Eu	2	—	—
5088.534	Ni I	20	—	—	5080.44	Hf II	2	10	Me	5074.710	Ce	10	—	—
5088.487	Cu II	—	10	Sh	5080.383	Ne I	—	[150]	IME	5074.6	Pb II	—	[40]	Ea
5088.420	Ru	7	—	—	5080.21	La II	8 W	10 h	Me	5074.340	Yb	200	5	—
5088.315	Sm	25	—	—	5080.05	Tb	10	—	Ed	5074.200	Ne I	—	[35]	IME
5088.301	U	10	—	—	5080.018	Mo	20	12	—	5074.062	Ne I	—	[3]	Ps
5088.260	Cu II	—	30	Sh	5079.982	Zr	2	—	—	5073.981	Zr I	6	—	—
5088.18	Yt I	2	—	Me	5079.961	Ni I	30	—	—	5073.73	Tb	15	—	Ed
5087.87	Tb	10	—	Ed	5079.955	Eu	5	—	—	5073.60	N II	—	[30]	Fl
5087.855	Co I	15	—	—	5079.867	Mo	10	3	—	5073.560	Fe	—	20 h	—
5087.645	Sm	40	—	—	5079.856	Sm	10	—	—	5073.08	A I	—	[200]	Ms
5087.64	Yb	1	10	Me	5079.753	Fe I	100	—	—	5072.971	Ru I	25	—	—
5087.48	Tb	15	—	Ed	5079.681	Ce	30	—	—	5072.920	Cr I	35	—	—

5072.9—5050.7 A.

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
5072.912	Ce	2	-	-	5065.79	Tb	40	-	Ed	5058.18	Hf II	8	10	Me
5072.884	Os	12	-	-	5065.74	Te	-	[8]	Bl	5058.08	Kr I	-	[4]	Me
5072.84	Er	8	-	-	5065.734	Ce	8	-	-	5058.073	Mo	12	6	-
5072.773	U	4	2	-	5065.685	Eu	3	-	-	5058.03	Ni I	20	-	-
5072.67	Sn II	2	[4]	Mo	5065.677	W	7	-	-	5058.013	W	9	-	-
5072.633	Th	5	-	-	5065.587	I	-	[8]	Ke	5058.007	Cb	50	10	-
5072.560	Cb	10	1	-	5065.58	Kr II	-	[20 whl]	Me	5057.98	Th	2	-	-
5072.55	Kr II	-	[40]	Me	5065.48	A I	-	[5]	Ms	5057.747	Sm II	100	1	-
5072.457	Ta	4	-	-	5065.448	Cu II	-	40	Sh	5057.684	Ru	4	-	-
5072.456	Sm	4	-	-	5065.39	I II	-	[10]	Ke	5057.60	Lu	15	1	Me
5072.43	Tm	5	-	Me	5065.312	Re	3	-	-	5057.490	Ru	4	-	-
5072.30	Ti II	3	20 h	Rl	5065.254	Cb	80	10	-	5057.482	Eu	4	-	-
5072.293	Cu II	-	20	Sh	5065.216	Zr I	10	-	-	5057.42	Rh I	2	-	Me
5072.19	Yt I	4	-	Me	5065.201	Fe	15	-	-	5057.374	I	-	[8]	Ke
5072.14	La I	3	-	-	5065.016	Fe I	25 h	-	-	5057.331	Ru I	100	-	-
5072.07	As II	-	4	Ro	5064.944	Th	4	-	-	5057.3	bh V	10	-	L
5071.89	Ca	6	2	Ad	5064.910	Zr I	10	-	-	5057.291	Ru	60	-	-
5071.866	Nd	5	-	-	5064.655	Ti I	150	35	-	5057.289	Mo	12	2	-
5071.773	Ce	18	-	-	5064.637	Mo	20	5	-	5057.196	U	6	-	-
5071.733	W	40	3	-	5064.612	Ta	7 h	-	-	5057.03	Hf II	20	30	Me
5071.668	Cb	10	-	-	5064.61	Au I	40	10	Ex	5056.890	Nd	15	-	-
5071.518	W	5	-	-	5064.455	Cb	3	1	-	5056.53	A I	-	200	Ms
5071.477	Ti I	40	1	-	5064.37	Tb	10	-	Ed	5056.461	La I	80	-	-
5071.30	A I	-	[5]	Ms	5064.335	Th	8	-	-	5056.430	Ir	2 h	-	-
5071.23	Hf	6	8	Me	5064.321	Sc I	12	15	-	5056.29	Tb	10	-	Ed
5071.187	Sm	100	-	-	5064.32	Rh	8	-	Me	5056.182	K II	-	[60]	Dm
5071.14	Sn II	2	[4]	Mc	5064.239	Sm II	30	-	-	5056.103	W	3	-	-
5071.02	Gd	15	-	Ed	5064.117	V	50	50	-	5056.10	Si	-	8	Sy
5070.99	A I	-	[40]	Ms	5064.068	Ti I	10	10	-	5056.079	Re	5 h	-	-
5070.957	Fe	1	70	-	5063.99	A I	-	[5]	Ms	5056.019	Eu	4	-	-
5070.881	U	2	2	-	5063.919	Ce	20	-	-	5056.01	Os	3 h	-	-
5070.7	Pb II	-	[40]	Ea	5063.773	U	12	-	-	5056.005	Ce	8	-	-
5070.65	Dy	5	-	Ed	5063.76	La II	2	3	Me	5055.782	Ce	12	-	-
5070.50	Tb	10	-	Ed	5063.76	Re	5	-	-	5055.69	P	-	[15]	Gu
5070.33	Er	12	-	-	5063.733	Eu	20	-	-	5055.626	Cb	3	1	-
5070.272	Eu	8	-	-	5063.726	Nd	12	-	-	5055.528	W	20	-	-
5070.262	Zr I	8	-	-	5063.620	W	8	-	-	5055.423	U	2	-	-
5070.249	Sc I	20	15	-	5063.408	Pd I	15	-	-	5055.42	Dy	3	-	Ed
5070.246	Yt I	4	-	-	5063.396	Er	8	-	-	5055.37	Pt	4	-	-
5070.17	Tb	10	-	Ed	5063.389	Pr	5	-	-	5055.342	Th	2	1	-
5070.009	Pr	3	-	-	5063.25	Tb	10	-	Ed	5055.005	Mo	20	10	-
5069.882	Ta	5	-	-	5063.158	Th	2	-	-	5054.975	Ba	12	2	Sz
5069.82	Xe	-	[10 wh]	Hu	5063.1	Pb I	-	10	Ro	5054.667	Cb	5	3	-
5069.80	Hf	2	-	Me	5062.95	Yb	2	15	Me	5054.65	Br	-	[200]	Bl
5069.66	A I	-	[5]	Ms	5062.925	La II	15	20	-	5054.647	Fe	3	-	-
5069.577	Zn I	15	-	Hx	5062.642	Ru I	10	-	-	5054.606	W	25	3	-
5069.445	Sm II	150	-	-	5062.521	Mo	20	6	-	5054.53	Kr II	-	[30 whl]	Me
5069.353	Ti I	40	-	-	5062.107	Ti I	40	1	-	5054.29	Tb	25	-	-
5069.26	Eu	2	-	Kn	5062.07	A	-	[200]	Rt	5054.18	A I	-	[300]	Ms
5069.148	Yb	30	2	-	5061.884	I	-	[5]	Ke	5054.174	Ce	10	-	-
5069.146	W	50	3	-	5061.657	Th	4	-	-	5054.085	Ti I	8	-	-
5068.859	Sc I	2	4	-	5061.515	U	2	-	-	5054.072	Sm	3	-	-
5068.786	Fe I	400	200	-	5061.42	I I	-	[25]	Db	5054.045	Mo	8	2	-
5068.655	Zn I	7	-	Hx	5061.397	Sm	3	-	-	5053.864	Pt	4	-	-
5068.65	Se II	-	[250]	Bl	5061.221	Th	12	1	-	5053.59	Mo	6	2	-
5068.39	A I	-	[5]	Ms	5060.972	U	4	-	-	5053.529	Ce	10	-	-
5068.332	Ti I	8	-	-	5060.922	Sm	30	-	-	5053.400	Pr	30	1	-
5068.290	Cr	20	-	-	5060.894	Tm	30	5	-	5053.362	U	6	-	-
5068.185	Sm	5	2	-	5060.884	Er	6	-	-	5053.296	W	60	10	-
5068.10	Cl II	-	[4]	Ks	5060.85	La II	2	3	Me	5053.268	Ce	10	-	-
5067.973	Th	10	-	-	5060.677	V	1	15	Me	5053.14	Ti II	-	4	El
5067.948	Eu	35	-	-	5060.635	Cu II	-	30	Sh	5052.949	Ru I	5	-	-
5067.898	La I	30	-	-	5060.44	Te	-	[8]	Bl	5052.930	Ne I	-	[25]	Ps
5067.870	Ta	60	-	-	5060.430	Re	5	-	-	5052.874	Ti I	50	3	-
5067.812	Yb	10	-	-	5060.423	Er	4	-	-	5052.755	Sm II	150	2	-
5067.71	Cr I	50	-	-	5060.413	Tm	8	10	-	5052.696	Cs II	-	[25]	Sv
5067.52	P	-	[15]	Gu	5060.393	Zr I	10	-	-	5052.592	Eu	4	-	-
5067.41	Kr	-	[3 h]	Me	5060.349	Mo	10	3	-	5052.54	Xe II	-	[25]	Hu
5067.32	Yb	5	5	-	5060.08	A I	-	[500]	Ms	5052.35	Ti II	-	[3]	El
5067.243	U	4	2	-	5060.079	Fe I	2	-	-	5052.233	W	10	-	-
5067.157	Sm	8	2	-	5059.965	Eu	5	-	-	5052.204	Re	2	-	-
5067.148	Ce	10	1	-	5059.877	Mo	40	20	-	5052.170	Ti	6	-	-
5067.082	Cu II	-	30	Sh	5059.866	Cs II	-	[25]	Sv	5052.122	C I	-	[100]	Jn
5066.99	Sb II	-	[4]	Lg	5059.854	Sm	16	-	-	5051.900	Cr I	50	-	-
5066.99	La II	2	20 h	Me	5059.852	Th	4	5 wh	-	5051.778	Cu II	-	60	Sh
5066.854	Sm II	10	-	-	5059.55	U	2	-	-	5051.636	Fe I	200	-	S
5066.779	Th	4	-	-	5059.481	Pt	60	3	-	5051.629	V I	20	20	-
5066.701	Er	4	-	-	5059.352	Cb	15	5	-	5051.59	P	-	[30]	Gu
5066.671	Tm	3	-	-	5058.948	Ir	5	2	-	5051.527	Ni I	50	-	-
5066.57	Ra II	-	[15]	Rs	5058.897	Cu II	-	30	Sh	5051.342	Th	3	-	-
5066.384	Sm II	15	-	-	5058.855	Sm II	10	-	-	5051.32	Hf	3	1	Me
5066.33	Xe	-	[2 wh]	Hu	5058.696	Ta	5	-	-	5051.064	Nd	8	-	-
5065.992	Ti I	50	2	-	5058.623	Er	8	-	-	5050.986	Ce	18	-	-
5065.926	Sm	3	3	-	5058.567	Th	12	2	-	5050.87	Gd	50	-	Ed
5065.910	Cr I	30	-	-	5058.556	Re	40	-	-	5050.780	Th	5	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
5050.6	bh Yt	10	-	-	Me	5043.546	In II	-	[50]	Ps	5035.068	Ir	2 h	-	-	-	-
5050.569	La I	80	4	-	-	5043.321	Ta	60	-	-	5035.03	Tb	15	-	-	Ed	-
5050.417	Os	5	-	-	-	5043.029	Cb	4	2	-	5034.90	Hf	3	-	-	-	Me
5050.075	Sm	8	2	-	-	5042.853	Ne I	-	[15]	Ps	5034.758	Sm	4	-	-	-	-
5050.048	Ca	-	4	-	-	5042.806	U	2	2	-	5034.638	Ru	6	-	-	-	-
5049.87	Yb	2	30 h	-	Me	5042.62	Dy	10	-	Ed	5034.436	Zr I	3	-	-	-	-
5049.825	Fe I	400	1	-	S	5042.620	Re	10	-	-	5034.415	Pr	30	-	-	-	-
5049.810	Th	30 w	5	-	-	5042.589	Mn	5	-	-	5034.33	Hf II	4	8	-	Me	L
5049.7	bh Yt	8	-	-	Me	5042.5	Pb II	-	[200]	Ea	5034.3	bh F	2	-	-	-	-
5049.58	Tb	15	-	-	Ed	5042.195	Ni I	80	-	-	5034.25	A I	-	[10]	-	-	Ms
5049.504	Sm	8	-	-	-	5042.086	Ce	10	-	-	5034.246	Er	6	-	-	-	-
5049.3	Pb II	-	[35]	-	Ea	5042.043	Tb	25	-	-	5034.212	Tm	100	100	-	-	-
5049.062	U	3	-	-	-	5042.038	Er	60	-	-	5034.175	Mo	4	1	-	-	-
5048.96	V	-	10	-	Me	5041.932	Sm	5	-	-	5034.172	Os	12	-	-	-	-
5048.851	Ni I	80	2 h	-	-	5041.869	Ta	4	-	-	5034.07	Tb	10	-	-	Ed	-
5048.818	Ce	30	-	-	-	5041.762	W	7	-	-	5033.85	Kr II	-	[100 whl]	-	Me	-
5048.813	A I	-	[500]	-	Ms	5041.759	Fe I	300	-	S	5033.813	Ce	20	-	-	-	-
5048.752	Cr I	30	-	-	-	5041.66	C I	-	[30]	Jn	5033.541	Eu	60	2	-	-	-
5048.541	Ce	5	-	-	-	5041.625	Ca I	30	-	-	5033.522	Pt	30	1	-	-	-
5048.454	Fe I	50	-	-	-	5041.56	Ra I	-	[35]	Rs	5033.517	Nd	6	-	-	-	-
5048.208	Ti I	15	-	-	-	5041.322	Cu II	-	10	Sh	5033.380	Pr	10	-	-	-	-
5048.082	Ni I	20	-	-	-	5041.23	A I	-	[10]	Ms	5033.2	C II	-	5 h	-	En	-
5048.040	La II	6	20	-	-	5041.081	Fe I	125	-	-	5033.12	Tb	15	-	-	Ed	-
5047.957	Cb	10	5	-	-	5041.077	Ni I	30	-	-	5033.03	Sb II	-	[15]	-	Lg	-
5047.74	S	-	[15]	-	Ms	5041.035	Si	-	4 wh	IJa	5032.748	Ni I	6	-	-	-	-
5047.736	He I	-	[15]	-	IMr	5040.855	Ce	30	-	-	5032.42	Eu	6	-	-	Kn	-
5047.735	Ti	8	-	-	-	5040.82	Hf II	100	150	Me	5032.408	Zr I	2	-	-	-	-
5047.706	Mo	25	20	-	-	5040.744	Ru I	10	-	-	5032.39	S	-	[8]	-	Bl	-
5047.70	O I	-	[15 h]	-	Ps	5040.74	P	-	[70 I]	Gu	5032.380	Mo	3	1	-	-	-
5047.52	Kr II	-	[4 hl]	-	Me	5040.619	Ti I	40	40	-	5032.2	Pb II	-	[20]	-	Ea	-
5047.45	Hf	15	5	Me	5040.56	Tb	10	-	-	Ed	5032.1	bh F	2	-	-	L	-
5047.43	Th	8	1	-	-	5040.55	Ti II	-	[3]	El	5032.025	A I	-	[60]	-	Ms	-
5047.416	U	6	3	-	-	5040.51	A I	-	[10]	Ms	5031.881	Cb	5	1	-	-	-
5047.343	Cu II	-	10	-	Sh	5040.364	W	35	1 h	-	5031.831	Os	20	-	-	-	-
5047.34	Tb	10	-	-	Ed	5040.353	Ru	7	-	-	5031.742	Ce	12	-	-	-	-
5047.312	Ru I	10	-	-	-	5040.34	Kr I	-	[7]	Me	5031.348	Ne I	-	[250]	-	IMe	-
5047.30	A I	-	[2]	-	Ms	5040.195	Nd	10	-	-	5031.287	Gd	30	-	-	-	-
5047.154	Os	3	-	-	-	5040.1	bh B	12	-	L	5031.26	Se II	-	[40]	-	Mz	-
5047.043	Th	5	-	-	-	5039.953	Ti I	125	25	-	5031.181	Sm II	30	-	-	-	-
5046.95	Ca	7	2	-	Ad	5039.948	Sm	25	-	-	5031.10	Tb	10	-	-	Ed	-
5046.884	La I	80	-	-	-	5039.933	Ce	8	-	-	5031.019	Se II	50	200 h	-	-	-
5046.755	Cb	3 h	1	-	-	5039.749	Ce	8	-	-	5030.96	Kr	-	[3 whs]	-	Me	-
5046.608	Ne I	-	[3]	-	Ps	5039.629	Ru	6	-	-	5030.958	Sm	8	-	-	-	-
5046.585	Zr I	25	-	-	-	5039.455	Sm	2	-	-	5030.90	I	-	[8]	-	Db	-
5046.525	Mo	20	6	-	-	5039.261	Fe I	100	2 h	-	5030.784	Fe II	1	125	-	-	-
5046.457	Ti	12	-	-	-	5039.259	Ni I	20	-	-	5030.778	Cu II	-	2	-	Sh	-
5046.43	Rh I	3	-	-	Me	5039.231	Th	8	-	-	5030.775	Mo	20	10	-	-	-
5046.421	Sm	6	-	-	-	5039.122	Os	50	-	-	5030.738	U	2	2	-	-	-
5046.416	I II	-	[10]	-	Ke	5039.115	Sm	2	-	-	5030.639	Mn	8	-	-	-	-
5046.31	Kr II	-	[80 whl]	-	Me	5039.06	C I	-	[30]	Jn	5030.129	Cb	5	2	-	-	-
5046.276	U	2	1	-	-	5039.038	Cb	200	30	-	5029.9	bh F	5	-	-	L	-
5046.270	Ir	2	2	-	-	5039.028	W	15	1 h	-	5029.898	Th	3	-	-	-	-
5046.060	Ir	5	2	-	-	5039.002	Cu II	-	10	Sh	5029.812	Mn	12	-	-	-	-
5045.99	Er	12	-	-	Ed	5038.907	Mo	10	4	-	5029.668	Cb	3	-	-	-	-
5045.82	Hg	-	[15 wh]	-	Wd	5038.77	Br	-	[60]	Bl	5029.64	A	-	[5]	-	Ms	-
5045.816	Ne I	-	[15]	-	Ps	5038.599	Ni I	50	-	-	5029.631	Th	10	-	-	-	-
5045.526	Pr	40	1	-	-	5038.54	Pt	5	-	Me	5029.605	Sm	4	-	-	-	-
5045.421	Ru	4	-	-	-	5038.402	Ti I	100	20	-	5029.549	Eu	30	1	-	-	-
5045.409	Ti I	25	-	-	-	5037.982	Ce	6	-	-	5029.5	Bi II	-	15	-	MI	-
5045.335	Eu	16 w	-	-	-	5037.97	Te	-	[15]	Bl	5029.48	Eu	500 w	-	-	Kn	-
5045.247	Th	4	-	-	-	5037.766	Ce	20	-	-	5029.450	Nd	15	-	-	-	-
5045.23	Sb	-	15 whs	-	Sp	5037.751	Ne I	-	[500]	IMe	5029.35	Br I	-	[10]	-	Ke	-
5045.098	N II	-	[200]	-	Fl	5037.665	Ta	20	-	-	5029.247	Os	8	-	-	-	-
5044.92	Xe II	-	[100]	-	Hu	5037.577	Ne I	-	[3]	Ps	5029.15	Kr I	-	[5]	-	Me	-
5044.882	Er	8	-	-	-	5037.458	Pr	10 w	-	-	5029.106	W	5	1 h	-	-	-
5044.8	C II	-	5	-	En	5037.368	Ta	60	-	-	5029.002	Mo	20	12	-	-	-
5044.8	Rn	-	[35]	-	Wa	5037.178	Mo	5	2	-	5029.000	Pr	3	-	-	-	-
5044.721	Th	8	-	-	-	5037.16	O I	-	[15 h]	Ps	5028.927	W	10	-	-	-	-
5044.56	Sb	-	[100]	-	Lg	5036.623	Ce	10	-	-	5028.903	Er	20	-	-	-	-
5044.418	Ta	8	-	-	-	5036.539	U	2	-	-	5028.88	I	-	[2]	-	Ke	-
5044.382	Mo	3 h	1 h	-	-	5036.468	Ti I	125	25	-	5028.609	Th	40 W	10 wh	-	-	-
5044.328	W	9	-	-	-	5036.4	bh F	2	-	L	5028.500	Nd	3 d	-	-	-	-
5044.279	Sm	150	-	-	-	5036.213	Sm	50	-	-	5028.443	Sm II	200	-	-	-	-
5044.274	Ti I	20	-	-	-	5036.185	I	-	[25]	Ke	5028.36	Kr II	-	[30 hl]	-	Me	-
5044.221	Fe I	25	-	-	-	5036.15	Xe II	-	[3 h]	Hu	5028.358	Rh I	5	-	-	-	-
5044.15	A I	-	[2]	-	Ms	5035.993	Cb	10	5	-	5028.309	Er	12	-	-	-	-
5044.141	In II	-	[50]	-	Ps	5035.989	Ne I	-	[35]	Ps	5028.304	Ce	18	-	-	-	-
5044.044	Pt	60	1	-	-	5035.961	Ni I	70 w	-	-	5028.279	Xe I	-	[200]	-	I	-
5044.008	Ce	25	1	-	-	5035.934	Er	12	-	-	5028.16	Ru I	12	-	-	-	-
5043.984	Cb	3	3	-	-	5035.907	Ti I	125	30	-	5028.137	Fe	100	-	-	-	-
5043.844	Er	12	-	-	-	5035.88	A I	-	[5]	Ms	5027.947	Re	25	-	-	-	-
5043.829	Pr	15	1	-	-	5035.743	W	6	-	-	5027.852	Nd	4	-	-	-	-
5043.800	Ca II	-	[80]	-	Sv	5035.528	U	2	2	-	5027.675	Yb	10	-	-	-	-
5043.772	In II	-	[30]	-	Ps	5035.426	Eu	20 w	-	-	5027.5	bh F	5	-	-	L	-
5043.586	Ti I	30	-	-	-	5035.374	Ni I	300 w	5	-	5027.435	W	9	-	-	-	-

5027.3—5007.0 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
5027.398	U	40	4	-	5020.2	bh F	5	-	L	5013.316	Cr I	60	2	-
5027.212	Fe	60	-	-	5020.142	Sc	3	-	-	5013.301	Ti I	80	7	Bh
5027.150	Nd	4	-	-	5020.139	Cu II	5	-	Sh	5013.29	Kr II	-	[100]	Me
5027.136	Fe I	60	-	-	5020.13	O I	-	[70]	Pa	5013.275	Cb	10	4	-
5026.968	Pr	80	1	-	5020.027	Ti I	100	80	-	5013.136	Eu	125	1	-
5026.907	Zr I	2	-	-	5019.985	Ca	4	-	-	5013.082	Ba II	-	50	-
5026.645	Ru	5	-	-	5019.86	V	-	35	Me	5012.933	U	2	-	-
5026.453	Re	25	-	-	5019.850	Mo	12	10	-	5012.83	Xe II	-	[50 h]	Hu
5026.413	Mo	5	1	-	5019.755	Pr	50	1	-	5012.611	Cu II	-	20	Sh
5026.361	Cb	50	8	-	5019.66	Yb	4	-	Me	5012.525	Os	12	-	-
5026.30	Rh	2	-	Me	5019.641	Os	8	-	-	5012.524	Ta	60	-	-
5026.197	Sm	40	-	-	5019.516	La	15	-	-	5012.510	Ce	12 w	-	-
5026.175	Ru I	15	-	-	5019.512	Cb	10	3	-	5012.464	Ni I	70	2 h	-
5025.95	Cd II	3	2 h	Tk	5019.511	W	6	-	-	5012.39	Rh I	3	-	Me
5025.91	Hf	2	2	Me	5019.34	O I	-	[50]	Ps	5012.331	Mo	10	3	-
5025.852	Th	2	-	-	5019.326	Th	3	-	-	5012.2	bh F	20	-	L
5025.787	Er	4	-	-	5019.32	Se II	-	[25]	Mz	5012.071	Fe I	300	-	S
5025.665	N II	-	[100]	Fl	5019.32	Cr	18	-	Gs	5012.026	N II	-	[15]	Fl
5025.665	W	8	1 h	-	5019.158	Sm	2	-	-	5012.01	In	5	-	Sq
5025.64	Hg I	-	[20]	Wd	5018.984	Ru	5	-	-	5011.765	Ce	12	1	-
5025.605	Ru	4	-	-	5018.78	O I	-	[30]	Ps	5011.755	Gd	10	-	-
5025.583	Ti I	100	8	-	5018.599	Eu	4 w	-	-	5011.749	Cb	3	2	-
5025.58	Rh I	4	-	Me	5018.583	Pr	50	1	-	5011.666	Nd	4	-	-
5025.459	Ir	2	-	-	5018.504	W	7	-	-	5011.464	Zr I	2	-	-
5025.432	U	2 h	-	-	5018.440	Fe II	80	50	-	5011.423	U	8	-	-
5025.408	Ce	3	-	-	5018.379	Sc I	2	5	-	5011.31	Fe	5	-	-
5025.403	Tb	15	-	-	5018.294	Ni I	70 w	-	-	5011.24	N II	-	[5]	Fm
5025.397	Mo	5	1	-	5018.20	Hf	20	2	Me	5011.227	Ru	25	-	-
5025.3	Sb II	-	18	Dv	5018.128	Ru	4	-	-	5011.1	bh V	7	-	L
5025.3	bh Yt	20	-	Me	5017.864	Tm	2	10	-	5011.003	Ne I	-	[25]	IMe
5025.1	bh F	5	-	L	5017.747	Cb	80	10	-	5010.961	Ni I	50	-	-
5024.844	Ti I	100	15	-	5017.65	Er	8	-	Ed	5010.892	U	2	2	-
5024.65	Tb	15	-	Ed	5017.63	A II	-	[5]	Rt	5010.875	Sm	2	-	-
5024.563	U	2	2	-	5017.615	Mn	10	-	-	5010.852	Fe	50	-	-
5024.3	bh Yt	10	-	Me	5017.6	bh F	10	-	L	5010.833	Gd	50	-	-
5024.266	Er	12	-	-	5017.591	Ni I	100 w	1	-	5010.814	Mo	12	4	-
5024.24	Tb	25	-	Ed	5017.539	Sm	3	-	-	5010.62	Re	2	-	-
5024.027	Cu II	-	5	Sh	5017.524	Mo	4 h	1 h	-	5010.620	N II	-	[100]	Fl
5024.022	Re	2	-	-	5017.355	Cb	5	-	-	5010.595	Ru	10	-	-
5023.88	Xe I	-	[3 h]	Me	5017.25	A I	-	[5]	Ms	5010.54	Tb	10	-	Ed
5023.85	Ti	3	2	-	5017.247	Th	50	10	-	5010.42	Sb II	-	[40]	Lg
5023.79	C	-	[5]	Jn	5017.200	W	9	-	-	5010.383	W	7 d	-	-
5023.601	Mo	5	1	-	5017.16	A II	-	[60]	Rt	5010.364	Mn	10	-	-
5023.525	U	2 h	-	-	5017.068	Ta	2	-	-	5010.362	Sm	8	-	-
5023.506	Sm II	60	-	-	5016.779	Mo	20	8	-	5010.202	Ti II	3	10 h	-
5023.476	Fe	10	300	Rl	5016.611	Cu I	15	-	IBu	5010.162	Sm	8	-	-
5023.131	Gd	20	-	-	5016.609	Sm II	80	-	-	5010.08	Tb	10	-	Ed
5023.11	N II	-	[15]	Fl	5016.507	Ce	10	-	-	5010.045	Ni I	25	-	-
5023.076	Hf	4	-	-	5016.387	N II	-	[70]	Fl	5010.029	Fe	7	-	-
5023.052	Th	6	-	-	5016.166	Ti I	100	15	-	5009.977	Th	6	-	-
5022.905	Eu	125	-	-	5015.89	Th	10	-	-	5009.888	W	7	2	-
5022.871	Ce	20	1	-	5015.675	He I	-	[100]	IMr	5009.833	Cu II	-	20	Sh
5022.870	Ne I	-	[25]	IMe	5015.64	Eu	10 w	-	Kn	5009.761	Er	6	-	-
5022.866	Ti I	100	18	-	5015.543	Pr	4	-	-	5009.758	Tm	50	50	-
5022.7	bh F	5	-	L	5015.321	W	40	5	-	5009.649	Ti I	50	2	-
5022.645	U	2 h	1	-	5015.207	Cu II	-	10	Sh	5009.54	S	-	[3]	Bl
5022.484	W	8	-	-	5015.187	Ne I	-	[5]	Ps	5009.519	Yb	20	50	-
5022.461	Sm	2	-	-	5015.057	Gd	100 W	-	-	5009.446	Th	2	-	-
5022.40	Kr II	-	[200]	Me	5014.981	Ir	10	-	-	5009.444	Ce	6	-	-
5022.250	Fe I	150	-	-	5014.959	Fe I	500	-	-	5009.406	Pr	3 h	-	-
5022.141	Co I	2	-	-	5014.954	Ru I	20	-	-	5009.4	bh F	30	-	L
5022.133	Tb	25	-	-	5014.9	bh F	20	-	L	5009.35	A	-	[200]	Rt
5022.12	Dy	3	-	Ed	5014.757	Th	4	-	-	5009.167	Ir	5	2 h	-
5022.038	Mn	4	-	-	5014.625	V I	125	125	-	5009.094	Ce	30	-	-
5021.903	Cr I	20	-	-	5014.595	Mo	30	20	-	5009.032	Mo	4	1	-
5021.88	Kr II	-	[100]	Me	5014.595	W	7	-	-	5009.02	Ca	-	4	Ad
5021.75	Hf	4	-	Me	5014.545	Nd	5	-	-	5008.969	Er	12	-	-
5021.728	U	3	1	-	5014.50	Yb	-	10	Me	5008.687	U	4	-	-
5021.68	Sb II	-	[8]	Lg	5014.45	La II	2	30 hl	Me	5008.63	Tb	10	-	Ed
5021.64	Tb	10	-	Ed	5014.241	Ti I	100	30	-	5008.363	I I	-	[5]	Ke
5021.510	Sc I	2	9	-	5014.236	Ni I	25	-	-	5008.222	U	30	25	-
5021.444	Ce	20	-	-	5014.23	Ca	5	2	Ad	5008.194	Th	8	1	-
5021.285	Cu II	-	20	Sh	5014.22	Ir	3	-	Me	5008.1	bh F	2	-	L
5021.258	W	8	-	-	5014.189	Ti I	40	15	-	5008.039	Cb	5	1	-
5021.229	Mo	4	1	-	5014.107	Sc	1	2	-	5007.630	Pr	4	-	-
5021.152	Ca	10	-	-	5014.017	Ru	7	-	-	5007.616	Mo	10	2	-
5021.136	Yb	2	10	-	5014.01	S	-	[3]	Bl	5007.37	Nd	5	-	Ed
5021.11	Hf	4	2	Me	5014.004	W	7	-	-	5007.316	N II	-	[150]	Fl
5020.892	Os	7	-	-	5013.80	Tb	10	-	Ed	5007.301	Co I	5	-	-
5020.58	Br	-	[30]	Bl	5013.76	Er	8	-	-	5007.3	bh Mg	12	-	L
5020.541	Th	10	-	-	5013.759	Ce	20	-	-	5007.288	Fe I	25 h	-	-
5020.44	Te	-	[8]	Bl	5013.712	Ti II	5	5	-	5007.238	Er	15	-	-
5020.43	Kr II	-	[4 whs]	Me	5013.680	Sm	10	-	-	5007.230	W	15	2	-
5020.376	Gd	20	-	-	5013.456	U	15	-	-	5007.213	Ti I	200	40	-
5020.305	Ru I	6	-	-	5013.412	U	2	2	-	5007.09	A I	-	[2]	Ms

Wave-length	Element	Intensity	Dis.	R	Wave-length	Element	Intensity	Dis.	R	Wave-length	Element	Intensity	Dis.	R
5006.975	Yt I	8	2	-	4999.468	La II	400	300	-	4991.774	Pr	3	-	-
5006.84	A	-	[2]	Ms	4999.117	Fe	4	-	-	4991.66	Sb II	-	[10]	Lg
5006.787	Cu II	-	30	Sh	4999.085	Gd	10 h	-	-	4991.538	U	2	-	-
5006.6	bh F	30	-	L	4999.00	Dy	2 h	-	Ed	4991.5	Hg I	15	-	Wd
5006.157	W	40	7	-	4998.547	Nd	10	-	-	4991.40	Tb	3	-	Ed
5006.133	Fe I	300	5	-	4998.54	Kr II	-	[5 whl]	Me	4991.284	La II	100	80	-
5005.78	Ir	2	-	-	4998.502	Ne I	-	[10]	Ps	4991.277	Fe I	80	-	-
5005.725	Fe	200	-	-	4998.47	Dy	2 h	-	Ed	4991.22	N II	-	[5]	Fi
5005.702	Ce	10	-	-	4998.389	Gd	25	2	-	4991.17	Xe II	-	[50 whl]	Hu
5005.69	Se	-	[8]	Bi	4998.233	Ni I	150	-	-	4991.066	Ti I	200	100	-
5005.599	V I	12	12	-	4998.181	Ta	15 W	-	-	4990.667	Ce	10	-	-
5005.433	Pb	20	4	-	4998.131	Ce	18	-	-	4990.462	Fe	5	-	-
5005.34	K II	-	[15]	Sg	4997.972	Pt	6	-	-	4990.116	U	3	-	-
5005.333	Ne I	-	[50]	Ps	4997.933	Tb	5	-	-	4990.103	Os	6	-	-
5005.246	Ru	7	-	-	4997.877	Cb	15	5	-	4990.031	Th	5	-	-
5005.24	Cr	1	3 Wh	Gs	4997.81	Ba II	-	[10]	Rs	4989.945	A I	-	[80]	Ms
5005.160	Ne I	-	[500]	Ime	4997.801	Fe	20	300	-	4989.937	Nd	35	-	-
5005.140	N II	-	[500]	Fi	4997.793	Rh	4	-	-	4989.92	U	-	3 h	-
5005.075	Sc	-	15 wh	-	4997.787	Th	6	2	-	4989.866	W	5	-	-
5004.99	Fe	7	-	-	4997.7	bh F	20	-	L	4989.440	Sm II	60	-	-
5004.907	Mn	20	-	-	4997.482	Ne I	-	[15]	Ps	4989.311	Tm	3	-	-
5004.824	Tb	15	-	-	4997.327	Th	3	-	-	4989.309	Th	6	2	-
5004.794	Fe	3	100	-	4997.29	I	-	[8]	Ke	4989.268	Pr	50	-	-
5004.584	Pr	5	1	-	4997.26	Ra II	-	[6]	Rs	4989.148	Ti I	100	4	-
5004.390	Ir	3	-	-	4997.103	Ti I	50	4	-	4989.091	W	15	-	-
5004.38	Cr	6 h	-	-	4996.850	Ni I	80	-	-	4988.973	Cb	150	10	-
5004.318	A	-	[20]	Ms	4996.823	La II	25	30	-	4988.963	Fe I	100 h	-	-
5004.133	Th	3	-	-	4996.7	bh Mg	9	-	L	4988.77	Xe II	-	[150 h]	Hu
5003.86	Dy	3 h	-	Ed	4996.331	Zr I	4	-	-	4988.688	Ce	12	-	-
5003.751	Ni I	20	-	-	4996.147	Nd	2	-	-	4988.649	Nd	2	-	-
5003.618	Re	2	-	-	4996.090	U	2 h	3 h	-	4988.30	Yb	4	1	Me
5003.6	bh F	50	-	L	4995.875	Rh I	2	-	-	4988.040	Co I	500 R	-	-
5003.525	Ru	5	-	-	4995.814	Tb	5	-	-	4987.989	Mo	15	2	-
5003.382	Sm	3	-	-	4995.730	Ba	2	-	-	4987.819	Zr I	3	-	-
5003.271	Ce	8	-	-	4995.66	Pr	2 wd	-	-	4987.706	Pr	2	-	-
5003.22	Tb	10	-	Ed	4995.627	Fe	3	60	-	4987.59	Dx	2	-	m
5003.1	bh F	2	-	L	4995.61	Ga	-	3	KI	4987.541	Ce	8	-	-
5002.958	Ru	4	-	-	4995.554	Eu	3	1	-	4987.377	N II	-	[15]	Fi
5002.88	Tb	10	-	Ed	4995.52	Cl II	-	[60]	Ke	4987.262	Ru I	15	-	-
5002.809	Fe I	20	-	-	4995.35	Dy	2 h	-	Ed	4987.166	Nd	10	-	-
5002.795	W	15	10	-	4995.320	W	10	-	-	4987.136	Th	15	4	-
5002.743	Ir	8	-	-	4995.318	Mo	20	5	-	4986.98	Br	-	[10]	Bi
5002.70	Br I	-	[40]	Ks	4995.15	I I	-	[25]	Db	4986.941	W	40	1 h	-
5002.692	N II	-	[15]	Fi	4995.084	Ti I	12	-	-	4986.94	Tb	4	-	Ed
5002.630	Pt	15	1	-	4995.006	Sc I	2	1	-	4986.934	I II	-	[35]	Ke
5002.454	Pr	8	1	-	4994.99	Sm	2	-	-	4986.903	U	8	6	-
5002.334	V I	90	90	-	4994.930	Ne I	-	[150 I]	Ime	4986.834	Pt	4	-	-
5002.248	Cb	10	5	-	4994.9	bh F	30	-	L	4986.834	La II	150	100	-
5002.14	Kr I	-	[2]	Me	4994.83	Dy	2 h	-	Ed	4986.820	Sm	3	-	-
5002.133	La II	10	15	-	4994.761	Zr I	8	-	-	4986.754	Eu	5	-	-
5002.097	Th	10	-	-	4994.706	Tm	2	-	-	4986.67	Tb	3	-	Ed
5001.98	Fe II	-	[30]	Di	4994.64	La I	2	-	m	4986.449	Co I	10	-	-
5001.871	Fe I	300	40	S	4994.613	Ce	10	-	-	4986.423	Ce	20 W	-	-
5001.790	La I	10	-	-	4994.37	W	2	2 h	Ex	4986.208	Gd	25	-	-
5001.641	Cs	-	[2]	Sv	4994.358	N II	-	[30]	Fi	4985.992	Re I	40 W	-	-
5001.495	Ce	6	-	-	4994.305	Cb	5	3	-	4985.959	Cr	25	-	-
5001.489	Ca	2	-	Cw	4994.133	Fe I	200	-	S	4985.9	bh Mg	8	-	L
5001.469	N II	-	[200]	Fi	4994.13	Lu	250	400	Me	4985.886	Sm II	20 d	-	-
5001.231	Sm II	40	-	-	4994.096	W	30	-	-	4985.769	Mn	12	-	-
5001.14	Lu	100	-	Me	4993.93	Xe II	-	[10 whl]	Hu	4985.60	As II	-	50	Ro
5001.128	N II	-	[150]	Fi	4993.92	Bi II	-	[20]	Om	4985.562	Mo	20	6	-
5001.094	W	12	-	-	4993.876	La I	80	-	-	4985.559	Fe I	100	-	-
5001.010	Ti I	80	2	-	4993.838	Tb	6	-	-	4985.531	Dy	2	-	-
5001.01	Xe	-	[15]	Hu	4993.81	Gd	10 h	-	Ed	4985.503	Cu II	-	10	Sh
5000.97	Al II	-	[15]	Sy	4993.768	Tm	3	1	-	4985.376	Th	10	-	-
5000.954	Cb	30	5	-	4993.53	Dy	2 h	-	Ed	4985.352	Rh	2 h	-	-
5000.87	Te	-	[25]	Bi	4993.51	S	-	[150]	Ms	4985.260	Fe I	100	-	-
5000.704	Cb	3	1	-	4993.253	Ta	5 h	1	-	4985.09	A I	-	[10]	Ms
5000.6	bh F	80	-	L	4993.049	Co I	5	-	-	4984.985	Rh I	5	-	-
5000.6	Sb II	-	20	Dv	4993.03	Xe II	-	[10]	Hu	4984.919	La I	4 W	-	-
5000.593	Pr	3	-	-	4992.940	U	4	4	-	4984.769	Hf II	2	4	-
5000.54	Hf	2	2	Me	4992.75	Se II	-	[300]	Bi	4984.722	W	15	-	-
5000.504	W	7	-	-	4992.736	Ru I	25	-	-	4984.166	W	15	-	-
5000.5	bh F	10	-	L	4992.468	Cb	10	2	-	4984.126	Ni I	500 W	1	-
5000.436	Nd	10	-	-	4992.402	Ce	12	-	-	4983.984	Eu	2	-	-
5000.395	Ne I	-	[3]	Pa	4992.36	Hf	3 h	2	Me	4983.90	Tb	2	-	Ed
5000.379	Er	15	-	-	4992.346	Er	2	-	-	4983.855	Fe I	200 h	-	-
5000.335	Ni I	150 w	-	-	4992.323	Tb	2	-	-	4983.8	bh Pb	6	-	L
5000.050	Sm II	25	-	-	4992.311	Pr	2	-	-	4983.571	La I	4	-	-
4999.938	Th	8	1	-	4992.236	Mo	8	3	-	4983.542	W	20	-	-
4999.912	Mo	50	25	-	4992.117	U	2	-	-	4983.526	Th	2 W	-	-
4999.743	Ir	6	2	-	4992.1	bh F	50	-	L	4983.461	Mo	8	2	-
4999.68	Hf II	30	40	m	4992.031	Sm II	80	-	-	4983.451	Sc I	6	4	-
4999.552	Ru	6	-	-	4992.03	Se II	-	[12]	Bi	4983.449	Ru I	7	-	-
4999.510	Ti I	200	80	-	4991.922	Sc I	8	8	-	4983.373	Sm	15	-	-

4983.2—4963.7 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4983.258	Fe I	100 h	-	-	4975.66	Se II	-	[300]	Bi	4970.09	Sm	7	-	-
4982.899	Nd	2	-	-	4975.585	Ir	2 wh	-	-	4970.032	Th	10	-	-
4982.895	Os	6	-	-	4975.494	Nd	6	-	-	4969.927	Fe	50	-	-
4982.845	Na I	200 wh	100	Hz	4975.372	Ru	5	-	-	4969.87	Dy	2 h	-	Ed
4982.83	Kr II	-	[50 hl]	Me	4975.354	Ti I	80	4	-	4969.833	Mo	3	1	-
4982.78	Tb	2	-	Ed	4975.25	Hf	25	4	Me	4969.749	Nd	5	-	-
4982.603	W	40	5	-	4975.21	Tb	2	-	Ed	4969.7	Bi II	2 h	8	MI
4982.507	Fe	200	-	-	4975.137	Cb	30	3	-	4969.693	Ta	40 l	1	-
4982.142	Yt II	8	50	-	4975.113	Tm	8	5	-	4969.64	P II	-	[150]	Gu
4982.132	Ce	8	-	-	4974.998	Dy	3	-	-	4969.639	Mo	10	4	-
4982.03	Ra	-	[10]	Rs	4974.920	Pr	15	-	-	4969.450	Re	4	-	-
4981.996	Pr	2	-	-	4974.87	Xe II	-	[2 h]	Hu	4969.36	Kr I	-	[15]	Me
4981.96	Dy	2 h	-	Ed	4974.760	Ne I	-	[50]	Ps	4969.164	Gd	100	-	-
4981.879	Ir	3	-	-	4974.733	Sm	2	-	-	4969.131	Th	3	-	-
4981.827	Mo	10	3	-	4974.52	Er	3	-	-	4969.09	Ir	2	-	Me
4981.733	Ti I	300	125	I	4974.51	I I	-	[3]	Db	4969.08	Kr I	-	[20]	Me
4981.714	Sm II	50	-	-	4974.5	bh Mg	7	-	L	4968.993	U	2	2	-
4981.541	Re I	15	-	-	4974.311	Yt I	8	2	-	4968.904	Ru I	40	-	-
4981.35	Ti II	-	[15]	El	4974.20	La II	-	4 h	Me	4968.76	O I	-	[100]	Ps
4981.283	Nd	10	-	-	4974.18	A I	-	[10]	Ms	4968.755	Th	10	-	-
4980.953	Th	8	-	-	4974.16	Yb	10	-	Me	4968.709	Fe	3	-	-
4980.893	Nd	2 h	-	-	4974.151	Cu II	-	4	Sh	4968.708	Eu	5	-	-
4980.82	Hg I	-	[6]	Wd	4974.123	Ru	20	-	-	4968.59	La I	4 d	-	Me
4980.71	Er	2	-	-	4974.104	Ce	10	-	-	4968.587	Gd	20	10	-
4980.686	Re I	4	-	-	4973.851	In II	-	[10]	Ps	4968.583	Ti I	40	1	-
4980.668	Tm	5	3	-	4973.85	Gd	25	-	Ed	4968.527	Ta	60 W	1	-
4980.57	Hg	-	[70]	Ps	4973.774	In II	-	[10]	Ps	4968.447	I II	-	[10]	Ke
4980.538	Tb	4	-	-	4973.734	Sm II	40	-	-	4968.424	W	6	-	-
4980.522	Pr	3 r	-	-	4973.691	In II	-	[15]	Ps	4968.170	Zr I	2	-	-
4980.380	Pt	4	-	-	4973.689	Cu II	-	4	Sh	4967.944	Sr I	20	-	ISn
4980.369	Sc I	6	8	-	4973.667	Sc I	6	5	-	4967.9	bh F	2	-	-
4980.354	Ru I	60	-	-	4973.605	In II	-	[15]	Ps	4967.897	Co I	10 w	-	-
4980.259	Sm	4	-	-	4973.575	Dy	2	-	-	4967.886	Pr	10	-	-
4980.187	Th	4	-	-	4973.538	Ne I	-	[100]	Ps	4967.86	O I	-	[80]	Ps
4980.17	Dy	2 h	-	Ed	4973.53	A	-	[2]	Ms	4967.826	Re	4	-	-
4980.161	Ni I	500 W	1	-	4973.394	Th	10	-	-	4967.782	Cb	150	50	-
4980.16	Tb	5	-	Ed	4973.360	Mo	25	5	-	4967.739	Sm	3	-	-
4980.006	Cu II	-	4	Sh	4973.17	V	-	2	Me	4967.670	W	6	-	-
4980.000	Mo	3	2	-	4973.144	Cb	20	5	-	4967.528	Co I	3	-	-
4979.97	Ho	2	-	Ex	4973.108	Fe I	100	-	-	4967.40	O I	-	[50]	Ps
4979.932	Co I	60	-	-	4973.048	Ti I	35	2	-	4967.33	Cl	-	[6]	Bl
4979.847	W	25	-	-	4973.019	Tb	4	-	-	4967.326	U	5	-	-
4979.76	Br I	-	[125]	Ks	4972.854	Re	3	-	-	4967.21	Ho	5	2	Ex
4979.625	Ne I	-	[5]	Ps	4972.8	Na I	3	-	Fl	4967.1	bh F	2	-	L
4979.477	Ir	3	-	-	4972.71	Xe II	-	[200 h]	Hu	4967.019	Sm	2	-	-
4979.318	Os	18	-	-	4972.622	Gd	25	-	-	4966.904	Yb	30	4	-
4979.175	Rh I	20	-	-	4972.609	Th	3	-	-	4966.903	Er	15	-	-
4979.125	Pr	3	-	-	4972.593	Cs II	-	[25]	Sv	4966.635	Er	2	-	-
4979.115	Mo	100	30	-	4972.568	W	15	-	-	4966.589	Co I	100	-	-
4978.897	Tm	2	1	-	4972.478	Pr	2	-	-	4966.387	Ce	10	-	-
4978.89	Kr II	-	[100 hl]	Me	4972.239	Ce	8	-	-	4966.386	Rh	8	-	-
4978.84	Rn	-	[300]	Rc	4972.179	Th	8	1	-	4966.116	V I	6	5	-
4978.606	Fe I	80	-	-	4972.166	Sm II	80	-	-	4966.096	Fe I	300	1	S
4978.585	Na I	15	10	Hz	4972.16	A	-	[20]	Rt	4965.881	Mn	50	2	-
4978.404	Mo	8	1	-	4972.100	U	8	6	-	4965.787	Sm	15	-	-
4978.361	Pr	3	-	-	4971.990	Li I	500	-	-	4965.731	Th	4	-	-
4978.204	Ti I	70	3	-	4971.959	Co I	150	-	-	4965.441	Pr	2	-	-
4977.953	La I	10	-	-	4971.958	Pd	10	-	-	4965.40	V	-	40	Me
4977.828	Ta	10 W	1	-	4971.936	Ce	8	-	-	4965.375	U	6	-	-
4977.748	Rh I	25	-	-	4971.926	Cb	20	5	-	4965.373	Cb	100	15	-
4977.744	Ti I	20	25	-	4971.786	Dy	2 h	-	-	4965.312	Hf	2 h	2	-
4977.694	Mo	50	3	-	4971.77	Ra	-	[15]	Rs	4965.232	Ce	3	-	-
4977.692	W	8	-	-	4971.71	Xe	-	[100 whl]	Hu	4965.177	Ce	8 w	-	-
4977.578	Pr	2 h	-	-	4971.668	Sr I	2	-	ISn	4965.12	A	-	[40]	Rt
4977.244	W	15	-	-	4971.660	Ce	2	-	-	4965.1	bh F	5	-	L
4976.822	Ti I	15	-	-	4971.616	In II	-	[5]	Ps	4965.064	Gd	100	10 h	-
4976.768	Cb	5 wh	-	-	4971.544	Pr	2	-	-	4965.038	K I	15	-	Da
4976.65	Cl I	-	[8]	Ks	4971.475	Ce	12	-	-	4965.00	Xe II	-	[4 whl]	Hu
4976.597	Th	8	-	-	4971.410	Tb	4	-	-	4964.928	Cr I	8	3	-
4976.423	Eu	3	-	-	4971.354	Ni I	100	-	-	4964.90	C II	-	10	Fl
4976.398	Pr	20	-	-	4971.048	Co I	-	-	-	4964.838	La I	5	-	-
4976.385	Er	2	-	-	4970.99	Tb	5	-	Ed	4964.751	Ti I	25	-	-
4976.345	Ni I	40	-	-	4970.922	Nd	5	-	-	4964.624	U	2	1	-
4976.197	Ru I	40	-	-	4970.918	Pr	5	-	-	4964.567	Pr	2	-	-
4976.196	Ta	40	1	-	4970.856	Tm	5	3	-	4964.565	Sm II	80	-	-
4976.155	Ni I	10	-	-	4970.768	Mo	4	1	-	4964.49	Tb	4	-	Ed
4975.986	Sm	80	-	-	4970.667	Ce	12	-	-	4964.414	Mo	25	8	-
4975.983	Mo	20	3	-	4970.653	W	8	-	-	4964.224	Sm	2	-	-
4975.961	Ne I	-	[10]	Ps	4970.496	Fe	20	-	-	4964.192	Mo	15	6	-
4975.940	Th	10	-	-	4970.476	Ir	6	2	-	4964.185	Pr	2	-	-
4975.9	Na I	3	-	Fl	4970.392	La II	125	100	-	4964.123	Th	12	1	-
4975.757	Eu	10	-	-	4970.367	Mo	3	2	-	4964.1	bh F	5	-	L
4975.752	Pr	25	-	-	4970.13	Hg I	5	-	Wd	4964.10	Tb	3	-	Ed
4975.71	Sb II	-	[3]	Lg	4970.122	Ce	6	-	-	4963.74	V	-	2	Me
4975.66	A I	-	[2]	Ms	4970.12	Cl II	-	[50]	Ks	4963.716	Zr I	3	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4963.707	Rh I	100	-	-	4956.123	Sm II	25	-	-	4949.769	La I	200	-	-
4963.334	Nd	15	-	-	4956.060	La	4	-	-	4949.72	Si	2	-	Sy
4963.195	Cb	8	2	-	4956.060	Pr	10	-	-	4949.617	Cr	8	-	-
4963.192	Th	10	-	-	4956.043	K I	10	-	Da	4949.45	A II	-	[2]	Rt
4963.104	Dy	2h	-	-	4955.965	Ce	6	-	-	4949.40	Dy	2	-	Ed
4963.080	Re	2	-	-	4955.964	Cu II	-	2	Sh	4949.4	bh Mg	5	-	L
4962.963	Th	5	-	-	4955.961	Sm	5	-	-	4949.019	Mo	15	3	-
4962.946	Cb	10 hs	1 h	-	4955.9	bh F	30	-	L	4948.94	Hf	10	2	Me
4962.910	Mo	5 h	2 h	-	4955.78	O II	-	[30]	Fl	4948.756	Zr I	5	-	-
4962.9	bh F	10	-	L	4955.775	U	8	-	-	4948.674	Ce	18 wh	-	-
4962.564	Fe	10 h	-	-	4955.388	Ce	6	-	-	4948.630	Sm II	125	-	-
4962.525	Eu	20	-	-	4955.382	Ne I	-	[150]	Ps	4948.588	W	15	-	-
4962.37	Hf	6	2	Me	4955.27	Kr I	-	[15]	Me	4948.587	Co I	4	-	-
4962.296	Zr I	3	-	-	4955.255	Ru	25	-	-	4948.52	Sb II	-	[50]	Lg
4962.294	W	12	-	-	4955.21	A I	-	[2]	Ms	4948.50	Kr II	-	[50 hl]	Me
4962.28	Tb	4	-	Ed	4954.882	Tm	3	-	-	4948.216	Dy	2	-	-
4962.263	Sr I	40	-	ISn	4954.811	Cr	100	8	-	4948.202	Pr	2	-	-
4962.2	bh Mg	6	-	L	4954.783	Nd	50	-	-	4948.193	Ti I	12	-	-
4962.10	Al II	15	3	Sy	4954.73	Br I	-	[10]	Ks	4948.067	Sm	5	-	-
4961.939	Sm II	100	-	-	4954.67	Yb	-	4 h	Me	4947.994	Ti I	7	-	-
4961.91	Fe	2	-	-	4954.665	Th	10	2	-	4947.97	Tb	5	-	Ed
4961.89	Hg II	-	10	Nu	4954.52	Tb	2	-	Ed	4947.582	V	1	15	-
4961.80	Dy	5	-	Ed	4954.364	Dy	3	-	-	4947.577	Th	10	2	-
4961.729	Th	5	-	-	4954.32	P II	-	[70 l]	Gu	4947.45	Sm	2	-	-
4961.7	bh F	10	-	L	4954.3	bh F	50	-	L	4947.40	Sb II	-	[30]	Lg
4961.544	U	2	-	-	4954.16	C II	-	5	En	4947.356	Eu	5	-	-
4961.530	W	10	-	-	4954.052	Sc I	10	8	-	4947.333	Ba	3	2	-
4961.497	Gd	100	-	-	4954.039	Ce	6	-	-	4947.20	Tb	2	-	Ed
4961.396	Nd	15	-	-	4953.91	Tb	3	-	Ed	4947.197	Pr	4	-	-
4961.389	Re	2	-	-	4953.790	Mo	6	2	-	4947.023	Nd	2 h	-	-
4961.388	Eu	2	-	-	4953.738	Ru	6	-	-	4946.736	Re	100	-	-
4961.260	Sm	2	-	-	4953.729	Cu II	-	15	-	4946.661	Th	6	-	-
4961.137	Rh	2	-	-	4953.716	Ce	8	-	-	4946.639	Fe	1	50	-
4961.040	Pr	2	-	-	4953.578	Er	3	-	-	4946.63	Ti II	-	[5]	EI
4960.494	Th	5	-	-	4953.495	Eu	12	-	-	4946.466	La II	100	50	-
4960.32	Hg	-	[5 h]	Wd	4953.38	Dy	3	-	Ed	4946.400	Fe I	5	40	-
4960.3	bh F	20	-	L	4953.29	Tb	3	-	Ed	4946.306	Sm	60	-	-
4960.260	Pr	10	-	-	4953.204	Ni I	150	-	-	4946.284	Dy	2	-	-
4960.25	Kr II	-	[100 hl]	Me	4953.190	Co I	50	-	-	4946.037	Ni I	5	-	-
4960.183	Eu	20	-	-	4953.166	Gd	10	-	-	4945.848	La I	6	-	-
4960.173	Rh	2	-	-	4953.129	Cb	5	2	-	4945.784	Co	4	-	-
4960.059	Sm II	10	-	-	4953.092	W	25	-	-	4945.61	Br	-	[15]	Bl
4959.863	Ru	15	-	-	4953.048	Sm II	50	-	-	4945.59	Kr II	-	[300]	Me
4959.688	Co I	5	-	-	4952.835	Os II	-	[30]	Sv	4945.53	Ti II	-	[2]	EI
4959.619	Mo	4	1	-	4952.646	Fe I	5 h	-	-	4945.510	Dy	2	-	-
4959.595	Dy	3	-	-	4952.6	bh F	80	-	L	4945.458	Ni I	90	-	-
4959.455	Ir	3	-	-	4952.509	Nd	8	-	-	4945.458	Th	6	-	-
4959.37	Br	-	[12]	Bl	4952.493	Gd	20	-	-	4945.442	Cb	15	1	-
4959.341	W	3	-	-	4952.415	Mn	3	-	-	4945.37	Hf II	10	12	m
4959.130	Nd	35	-	-	4952.373	Sm II	125	-	-	4945.275	Mo	6	1	-
4959.034	Os	2	-	-	4952.26	Dy	2 h	-	Ed	4945.20	Sm	10	-	-
4958.93	Tb	4	-	Ed	4952.248	U	3	1	-	4944.987	Ne I	-	[100]	IMe
4958.9	bh F	20	-	L	4952.069	La II	50	40	-	4944.96	Yb	-	7 h	Me
4958.793	Gd	125	4	-	4952.02	Mn	5	-	-	4944.88	Re	4	-	Me
4958.725	Th	4	-	-	4951.959	Mo	12	4	-	4944.858	Rh	5	-	-
4958.62	Tb	2	-	Ed	4951.9	Hg II	-	[2]	Ps	4944.835	Nd	50	-	-
4958.436	Sm	2	-	-	4951.852	U	2	-	-	4944.80	A I	-	[5]	Ms
4958.225	Ce	3	-	-	4951.828	Co I	2	-	-	4944.617	Ce	18	-	-
4958.19	Si	6	-	Sy	4951.75	A I	-	[10]	Ms	4944.576	Cr	35	-	-
4958.139	Nd	5	-	-	4951.739	Er	15	-	-	4944.55	Se	-	[20]	Bl
4958.114	Ta	8	-	-	4951.708	Zr I	3	-	-	4944.499	U	6	-	-
4957.86	I	-	[8]	Ke	4951.696	Sc I	2 h	-	-	4944.388	Ti I	5	-	-
4957.842	Ru	10	-	-	4951.627	Cu II	-	5	Sh	4944.358	Er	3	-	-
4957.8	Rn	-	[10]	Wa	4951.450	Dy	3	-	-	4944.31	Sn II	6	[10]	Mc
4957.791	La	3	-	-	4951.357	Pr	150	-	-	4944.081	Yb	4	20	-
4957.69	Sm II	8	-	-	4951.3	bh V	2	-	L	4943.901	Nd	10	-	-
4957.641	V I	3	2	-	4951.298	Sm	2	-	-	4943.874	Mo	6	3	-
4957.609	Fe I	300	150	-	4951.00	Dy	2 h	-	Ed	4943.742	Re	2 w	-	-
4957.539	Mo	60	25	-	4950.816	K I	10	-	Da	4943.735	Pr	3	-	-
4957.393	Cb	8	3	-	4950.804	Ru	7	-	-	4943.451	Ce	4	-	-
4957.357	Dy	20	3	-	4950.8	bh F	100	-	L	4943.44	Sm	2	-	-
4957.307	Fe I	100	20	-	4950.72	Br	-	[4]	Bl	4943.41	P II	-	[150 l]	Gu
4957.188	Tm	50	5	-	4950.719	Nd	5	-	-	4943.282	Co I	2	-	-
4957.162	Ba II	-	[50]	-	4950.658	Yt	3	15	-	4943.24	Cl II	-	[15]	Ks
4957.122	Ne I	-	[150]	IMe	4950.657	Er	5	-	-	4943.24	K II	-	[30]	Bn
4957.033	Ne I	-	[1000]	IMe	4950.645	Pr	2	-	-	4943.20	I II	-	[10]	Mu
4956.974	Ce	5	-	-	4950.620	Th	10	5 h	-	4943.16	Si	5	2	Sy
4956.911	Zr I	3 h	-	-	4950.618	Mo	80	30	-	4943.074	Ti I	2	-	-
4956.790	U	-	2	-	4950.590	Os	3	-	-	4943.06	I	-	[8]	Ke
4956.769	Re	30	-	-	4950.285	Nd	3	-	-	4943.020	Cu II	-	6	Sh
4956.753	A I	-	[100]	Ms	4950.171	U	8	8	-	4942.97	O II	-	[100]	Mh
4956.731	Sm	2	-	-	4950.108	Eu	2	-	-	4942.965	Mo	4	1	-
4956.645	Pr	40 w	-	-	4950.105	Fe I	-	10	-	4942.961	Nd	6	-	-
4956.588	Cb	3	2	-	4950.0	Rn	-	[35]	Wa	4942.96	A II	-	[5]	Rt
4956.578	Mo	15	5	-	4949.836	Re	15	-	-	4942.940	Os	18	-	-

4942.8—4923.8 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4942.854	Dy	2	-	-	-	4936.004	Pr	50	-	-	-	4929.25	Ca I	2	-	-	Sd
4942.807	V I	4	3	-	-	4935.85	Ra	15	-	m	-	4929.16	A I	-	-	[2]	Ms
4942.640	U	6	6	-	-	4935.830	Ni I	150	1	-	-	4928.975	Cb	5	5	-	-
4942.569	Gd	100	-	-	-	4935.813	Os	12	-	-	-	4928.919	Tb	3 h	-	-	-
4942.495	Cr I	125	3	-	-	4935.729	Sc I	5	1	-	-	4928.895	Ti I	2	-	-	-
4942.418	Mn	3	-	-	-	4935.7	bh C	-	-	L	-	4928.849	Er	2	-	-	-
4942.367	Mo	5	3	-	-	4935.632	Ru	10	-	-	-	4928.79	Br	-	[150]	-	Bl
4942.350	Co I	2	-	-	-	4935.618	La II	8	-	-	-	4928.69	Tb	3	-	-	Ed
4942.34	Lu	40	3	-	Me	4935.55	P	-	15	-	Gu	4928.447	U	20	1	-	-
4942.310	Pr	4 W	-	-	-	4935.502	Yb	200	10	-	-	4928.398	Pr	4	-	-	-
4942.01	Br	-	-	[5]	Bl	4935.498	Er	35	-	-	-	4928.38	Hf	2	5	-	-
4941.964	W	8	-	-	-	4935.458	Sm	20	-	-	-	4928.341	Ti I	100	4	-	-
4941.964	K I	5	-	-	Da	4935.380	Pr	2	-	-	-	4928.30	In II	-	-	[5]	Ps
4941.921	Cb	3 h	1 h	-	-	4935.3	bh Mg	4	-	L	-	4928.283	Co I	200 W	-	-	-
4941.920	Ni I	2	-	-	-	4935.222	Co I	2	-	-	-	4928.235	Ne I	-	-	[70]	IMe
4941.846	Er	2	-	-	-	4935.136	Pr	2	-	-	-	4928.226	Yt I	2	12	-	-
4941.83	Tb	2	-	-	Ed	4935.03	N I	-	[250]	Mt	-	4928.005	Eu	5	-	-	-
4941.656	Mo	40	25	-	-	4934.825	La II	150	100	-	-	4927.936	Ir	2	2	-	-
4941.578	Ti I	30	-	-	-	4934.607	Ru	4	-	-	-	4927.875	Fe	20	-	-	-
4941.516	Cb	5	3	-	-	4934.48	Kr I	-	-	[4 h]	Me	4927.777	Th	5	-	-	-
4941.390	Sm II	8 d	-	-	-	4934.45	Hf II	40	50	m	-	4927.695	U	2	-	-	-
4941.350	Co I	3	-	-	-	4934.242	Sc I	-	8	-	-	4927.53	Ra II	-	-	[100]	Rs
4941.338	Sc I	3	5	-	-	4934.15	Mn	25	5	-	-	4927.447	Fe	50	6	-	-
4941.322	Ti I	4	-	-	-	4934.088	Th	4	2	-	-	4927.359	Er	2	-	-	-
4941.156	Dy	2	-	-	-	4934.086	Ba II	400 h	400 h	-	-	4927.330	Dy	2	-	-	-
4941.02	O II	-	-	[50]	Mh	4934.074	Er	18	-	-	-	4927.16	P II	-	-	[50 I]	Gu
4941.015	Ti I	4	-	-	-	4934.071	Pr	3	-	-	-	4927.055	Pr	3	-	-	-
4940.714	Tb	4	-	-	-	4934.065	Co	25	-	-	-	4927.047	Mo	3	1	-	-
4940.64	B II	-	2	-	En	4934.023	Fe I	40	-	-	-	4926.97	Hf II	8	10	-	m
4940.617	Sm II	30	-	-	-	4934.000	Ni I	3	-	-	-	4926.966	Er	2	-	-	-
4940.320	Nd	2 h	-	-	-	4933.852	Th	8	1	-	-	4926.907	Re	2	-	-	-
4940.296	Pr	50	-	-	-	4933.845	Dy	2	-	-	-	4926.821	Tb	3	-	-	-
4940.208	Os	5	-	-	-	4933.822	W	12	-	-	-	4926.705	W	7	-	-	-
4940.138	Pt	3	-	-	-	4933.740	Re	15 w	-	-	-	4926.56	Br	-	-	[10]	Bl
4940.060	Cu II	-	2 h	-	Sh	4933.732	Mo	12	4	-	-	4926.442	U	3	1	-	-
4939.941	Ir	2	-	-	-	4933.657	U	8	-	-	-	4926.430	Mo	25	12	-	-
4939.905	Zr	3	-	-	-	4933.643	Zr I	4	-	-	-	4926.390	Cu II	-	6	-	Sh
4939.735	Pr	100	-	-	-	4933.627	Fe	2	70	-	-	4926.385	Os	3	-	-	-
4939.70	Tb	3	-	-	Ed	4933.527	Ta	5 s	1	-	-	4926.193	Mo	25	12	-	-
4939.690	Fe I	150	2	-	S	4933.497	Ir	2	-	-	-	4926.158	Ti I	20	-	-	-
4939.665	Mo	15	5	-	-	4933.461	Mo	4	2	-	-	4926.14	Hf	2 h	-	-	Me
4939.550	Gd	30	-	-	-	4933.38	Tb	2	-	-	Ed	4926.005	Ta	60	2	-	-
4939.244	Fe I	10 h	-	-	-	4933.348	Fe	50	30	-	-	4925.789	Th	3	-	-	-
4939.173	Ir	4	-	-	-	4933.333	Mo	15	3	-	-	4925.652	V I	25	20	-	-
4939.125	Ce	20	-	-	-	4933.303	Sm II	25	-	-	-	4925.630	Pr	10 w	-	-	-
4939.041	Ne I	-	-	[100]	IMe	4933.25	F II	-	-	[30]	Di	4925.578	Ni I	100	-	-	-
4939.01	Ho	3	-	-	Ex	4933.24	A	-	-	[30]	Rt	4925.435	Er	2	-	-	-
4938.897	Pr	8	-	-	-	4933.220	Cb	5 h	-	6 w	-	4925.425	Th	4	-	-	-
4938.820	Ce	2	-	-	-	4933.102	Mo	30	15	-	-	4925.410	Ti I	25	-	-	-
4938.817	Fe I	300	1	-	-	4933.063	U	6	-	-	-	4925.405	La	6	-	-	-
4938.76	Ir	2	-	-	Me	4932.879	Co I	5	-	-	-	4925.321	Pr	5	-	-	-
4938.75	K II	-	-	[10]	Bn	4932.818	Eu	8	-	-	-	4925.32	S II	-	-	[100]	Ig
4938.618	Gd	150	2	-	-	4932.809	Pr	2	-	-	-	4925.293	Fe I	1000 R	-	-	50 r
4938.434	Ru I	60	-	-	-	4932.792	W	12	-	1 h	-	4925.25	Te	5	-	-	[15]
4938.427	Pr	5	-	-	-	4932.24	As II	-	-	5	Ro	4925.17	Cl II	-	-	-	[15]
4938.38	Kr I	-	-	[2 h]	Me	4932.168	Pr	4	-	-	-	4925.018	Th	4	2	-	-
4938.31	Eu	250 W	-	-	Kn	4932.030	V I	15	12	-	-	4924.980	Co I	4	-	-	-
4938.293	Ti I	70	2	-	-	4932.00	C I	-	40	-	Jn	4924.957	Ta	30	1	-	-
4938.183	Fe I	100	-	-	-	4931.945	Yb	4	-	-	-	4924.934	In II	-	-	[80 h]	Ps
4938.104	Sm II	125	-	-	-	4931.808	Er	3	-	-	-	4924.867	Cb	3	2	-	-
4938.088	Ir	10	3	-	-	4931.79	Tb	8	-	-	Ed	4924.83	Cl II	-	-	[10]	Ks
4937.967	Cu II	-	5	-	Sh	4931.653	Cu II	-	25	-	Sh	4924.815	Pr	5	-	-	-
4937.743	Ti I	30	-	-	-	4931.594	Ta	3 wh	1	-	-	4924.783	Mo	20	8	-	-
4937.718	A I	-	-	[30]	Ms	4931.556	W	30	-	-	-	4924.776	Fe I	100	-	-	S
4937.70	B	-	-	2	Sy	4931.483	Cu II	-	6	-	Sh	4924.734	Eu	10	-	-	-
4937.67	Tb	2	-	-	Ed	4931.149	Mo	20	4	-	-	4924.644	U	6	8	-	-
4937.626	Ta	40	2	-	-	4931.109	Cr	15	-	-	-	4924.588	Pr	80	-	-	-
4937.433	Mo	3	2	-	-	4931.00	Dy	2 h	-	-	Ed	4924.565	W	12	-	-	-
4937.337	Ni I	400 w	-	-	-	4930.944	Ne I	-	-	[50]	Ps	4924.531	Nd	80	-	-	-
4937.229	Yb	6	80	-	-	4930.928	Sm	10	-	-	-	4924.50	O II	-	-	[60]	Mh
4937.196	Cu II	-	6	-	Sh	4930.924	Yt I	4	-	-	-	4924.431	Th	8	2	-	-
4936.99	Cl II	-	-	[25]	Ks	4930.866	Zr I	3	-	-	-	4924.418	Ir	2	-	-	-
4936.96	Yb	3 h	-	-	Me	4930.729	Nd	5	-	-	-	4924.28	Cl II	-	-	[18]	Ks
4936.943	U	2 h	-	-	-	4930.721	Ce	10	-	-	-	4924.258	Ce	20	-	-	-
4936.835	Dy	3	-	-	-	4930.708	Gd	80	-	-	-	4924.255	Nd	2	-	-	-
4936.768	Th	10	-	-	-	4930.66	Br	-	-	[50]	Bl	4924.162	Pd	2	-	-	-
4936.706	Cb	3 h	-	-	-	4930.539	Ce	10	-	-	-	4924.094	Tb	4	-	-	-
4936.590	Sm	4	-	-	-	4930.38	Kr I	-	-	[4 h]	Me	4924.08	S II	-	-	[60]	Ig
4936.421	Ta	100 s	-	-	-	4930.331	Fe I	25	-	-	-	4924.056	Sm	30	-	-	-
4936.411	Co I	6	-	-	-	4930.183	Cr	35	-	-	-	4924.043	Zn II	15	30	-	IHz
4936.345	Gd	30	2	-	-	4930.002	Pd	3	-	-	-	4924.04	Ce	2	-	-	Kn
4936.334	Cr	200	5	-	-	4929.988	Th	10	-	-	-	4923.929	Re	150	-	-	-
4936.231	Ru	6	-	-	-	4929.561	Sm II	40	-	-	-	4923.916	Fe II	30	50	-	-
4936.112	Dy	2	-	-	-	4929.371	Pr	3	-	-	-	4923.9	bh Mg	3	-	-	L
4936.021	Sm II	80	-	-	-	4929.35	Dy	3	-	-	Ed	4923.83	Tm	30	-	-	Me

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4923.813	Sm II	30	-	-	-	4917.354	Ru I	4	-	-	-	4911.593	Ru I	10	-	-	-
4923.720	Fe	5	100	-	-	4917.29	Se II	-	-	[8]	-	4911.468	Pr	2	-	-	-
4923.51	Gd	10	-	2	Ed	4917.250	Fe	3 h	-	-	-	4911.441	Th	4	-	-	-
4923.471	Ta	60 W	1	-	-	4917.230	Ta	10 s	1	-	-	4911.406	Eu	30	6	-	-
4923.284	Cr	10	-	-	-	4917.180	Dy	3	-	-	-	4911.379	Ta	30	1	-	-
4923.161	Dy	6	2	-	-	4917.15	S II	-	-	[30]	-	4911.337	La II	4	20	-	-
4923.152	Xe I	-	-	[500]	IHu	4917.053	Er	3	-	-	-	4911.185	Ti II	12	100	-	-
4922.946	Th	10	-	-	-	4917.04	Yb	-	-	4 h	-	4911.127	Th	8	-	-	-
4922.838	Sc I	4	5	-	-	4917.03	I I	-	-	[100]	-	4910.948	Cb	15	10	-	-
4922.73	Ca	-	2	-	Ad	4917.001	Pr	2	-	-	-	4910.93	Hf	3	-	-	Me
4922.64	Tb	2	-	-	Ed	4916.869	U	2	-	-	-	4910.778	Zr I	3	-	-	-
4922.513	Rh I	10	-	-	-	4916.85	Tb	3	-	-	Ed	4910.741	W	30	-	-	-
4922.472	Sm II	30	-	-	-	4916.645	U	2	-	-	-	4910.570	Fe I	15	-	-	-
4922.468	Nd	4	-	-	-	4916.618	La	3	-	-	-	4910.55	Te	-	[50]	-	Bl
4922.455	Pr	2 w	-	-	-	4916.602	Gd	30	-	-	-	4910.463	Os	8	-	-	-
4922.366	Re	2	-	-	-	4916.6	Bi II	-	-	[10]	-	4810.406	Sm	150	-	-	-
4922.361	V I	5	4	-	-	4916.507	Xe I	-	-	[500]	-	4910.39	Kr I	-	-	[2]	-
4922.267	Cr	200	40	-	-	4916.420	Dy	2	-	-	-	4910.339	U	15	1	-	-
4922.235	Eu	2	-	-	-	4916.390	Cb	10	2	-	-	4910.328	Fe I	15	-	-	-
4922.227	Dy	4	2	-	-	4916.258	V I	5	4	-	-	4910.28	Br	-	-	[2]	-
4922.14	Cl II	-	-	[20]	-	4916.190	Mo	4	2	-	-	4910.236	Ru	6	-	-	-
4921.929	He I	-	-	[50]	-	4916.184	W	20	-	-	-	4910.124	Gd	25	-	-	-
4921.918	Ce	8	-	-	-	4916.036	Hg I	-	-	[50]	-	4910.08	Tb	3	-	-	Ed
4921.887	Yt I	10	30	-	-	4915.94	Kr II	-	-	[100 hl]	-	4910.060	Nd	8	-	-	-
4921.86	Si	8	2	-	Sy	4915.90	Tb	6	-	-	Ed	4910.046	Hf	3	2	-	-
4921.804	Os	6	-	-	-	4915.836	Gd	40	-	-	-	4910.026	Fe I	100	-	-	-
4921.783	La II	500	400	-	-	4915.821	Cu II	-	5	-	-	4909.80	Dy	2	-	-	Ed
4921.769	Ti I	100	5	-	-	4915.668	Ce	15	-	-	-	4909.770	Sc I	4	10	-	-
4921.765	Pr	4	-	-	-	4915.605	Fe	2 h	-	-	-	4909.726	Cu II	-	25	-	Sh
4921.70	Lu	3	8	-	Me	4915.5	Rn	-	-	[35]	-	4909.390	Fe I	50	-	-	-
4921.610	Th	20	-	-	-	4915.490	U	4	4	-	-	4909.380	U	2	-	-	-
4921.514	Dy	4	-	-	-	4915.418	Pr	4	-	-	-	4909.186	Mo	30	15	-	-
4921.48	Xe II	-	-	[500]	-	4915.321	Ce	18	-	-	-	4909.107	Ti I	12	-	-	-
4921.271	Ta	50	2	-	-	4915.26	Hf	5	3	-	m	4909.032	Cu II	-	2	-	Sh
4921.27	Br I	-	-	[20]	-	4915.236	Ti I	30	10	-	-	4908.998	Yt I	4	15	-	-
4921.157	Nd	3	-	-	-	4915.085	In II	-	-	[30]	-	4908.99	Dy	2	-	-	Ed
4921.074	Ru I	40	-	-	-	4915.025	Re	30	-	-	-	4908.890	W	6	-	-	-
4921.042	A I	-	-	[80]	-	4914.955	Ta	50	1	-	-	4908.722	Cb	3	2	-	-
4921.00	Br I	-	-	[2]	-	4914.940	Ce	8	-	-	-	4908.620	Rh	5	-	-	-
4920.98	Se	-	-	[15]	-	4914.900	N I	-	-	[20]	-	4908.572	Re	20	-	-	-
4920.975	Hf	2	5	-	-	4914.735	Dy	3	-	-	-	4908.52	A I	-	-	[10]	-
4920.971	La II	500	400	-	-	4914.709	Pr	4	-	-	-	4908.484	Co	3	-	-	Ms
4920.945	Cr	50	-	-	-	4914.62	Kr II	-	-	[2 h]	-	4908.423	In II	-	-	[5]	-
4920.882	Ta	5	1	-	-	4914.418	Pr	3	-	-	-	4908.34	Kr II	-	-	[2 hl]	-
4920.783	Ce	15	-	-	-	4914.385	Nd	15	-	-	-	4908.316	In II	-	-	[10]	-
4920.692	Nd	60	-	-	-	4914.337	W	12	1	-	-	4908.224	Mo	5 h	-	-	-
4920.505	Fe I	500	125	-	-	4914.32	Cl II	-	-	[12]	-	4908.121	Ce	6	-	-	-
4920.48	S	-	-	[15]	-	4914.32	A II	-	-	[2]	-	4908.04	Tb	4	-	-	Ed
4920.37	Sm II	125	-	-	Ms	4914.309	Sm II	25	-	-	-	4907.98	Bi II	-	12 wh	-	Om
4920.261	Co I	10	-	-	-	4914.200	Ru	5	-	-	-	4907.888	Ru I	20	-	-	-
4920.108	Ta	150 W	3	-	-	4914.2	Sb II	-	4	-	Dv	4907.793	Nd	3	-	-	-
4920.031	Cu II	-	3	-	Sh	4914.122	Th	5	-	-	-	4907.789	Sm	2	-	-	-
4919.888	Ce	12 s	-	-	-	4914.086	Co	5	-	-	-	4907.745	Fe I	25	-	-	-
4919.882	Sm	2	-	-	-	4914.029	Pr	60	-	-	-	4907.730	Ta	50	1	-	-
4919.866	Ti I	80	3	-	-	4913.970	Ni I	200	-	-	-	4907.50	Si	3	2	-	Sy
4919.859	Pd I	12	-	-	-	4913.825	Ir	2	-	-	-	4907.433	Dy	2	-	-	-
4919.814	Th	50	20	-	-	4913.622	Ti I	125	15	-	-	4907.426	Mo	30	20	-	-
4919.693	Rh I	10	-	-	-	4913.520	Rh I	6	-	-	-	4907.34	Hf II	2	4	-	Me
4919.66	Xe II	-	-	[125]	-	4913.423	Ce	4	-	-	-	4907.276	Nd	3	-	-	-
4919.590	Pr	4	-	-	-	4913.422	Nd	60	-	-	-	4907.173	Eu	20	6	-	-
4919.460	Cr	6	-	-	-	4913.36	Ir	2	-	-	Me	4907.17	Cl II	-	-	[15]	-
4919.409	Ca	3	2 l	-	-	4913.265	Ru I	5	-	-	-	4907.149	In II	-	-	[50]	-
4919.21	Tb	2	-	-	Ed	4913.259	Sm II	150	-	-	-	4907.125	Co I	2	-	-	-
4919.12	Te	-	-	[30]	-	4913.165	U	8	5	-	-	4906.99	Ho	2	2	-	Ex
4918.999	Fe I	300	50	-	S	4913.127	Pr	3	-	-	-	4906.983	Pr	50	-	-	-
4918.998	Ru	7	-	-	-	4913.087	V	2	1	-	-	4906.973	In II	-	-	[10]	-
4918.985	V I	3	2	-	-	4912.909	Cu II	-	6	-	Sh	4906.911	Mo	4	-	-	-
4918.984	Sm	125	-	-	-	4912.7	Pb II	-	-	[3]	-	4906.80	O II	-	-	[50]	-
4918.98	Al II	-	-	[20]	-	4912.629	Pr	10	-	-	-	4906.683	So I	3	4	-	Mh
4918.876	Ta	4	-	-	-	4912.605	Os	80	-	-	-	4906.548	Cu II	-	6	-	Sh
4918.835	Rh I	5	-	-	-	4912.529	Th	12	2	-	-	4906.33	Hf	2 h	2 h	-	Me
4918.712	Ni I	40	-	-	-	4912.52	Dy	4	-	-	Ed	4906.3	Ti I	5	-	-	Fl
4918.66	Gd	10	-	-	Ed	4912.391	Co I	5	-	-	-	4906.233	Dy	5	-	-	-
4918.373	Cu II	-	-	10	-	4912.369	Cu II	-	5	-	-	4906.205	Fe	15	-	-	-
4918.363	Ni I	200 W	1	-	-	4912.367	Yb	5	-	-	-	4906.108	Yt I	6	20	-	-
4918.220	Dy	4	-	-	-	4912.191	W	5	-	-	-	4906.023	Er	18	-	-	-
4918.155	Mo	4	-	-	-	4912.157	U	1	2	-	-	4905.790	Sm	2	-	-	-
4918.10	Tb	2	-	-	Ed	4912.05	Te	-	-	[15]	-	4905.69	Tb	3	-	-	Ed
4917.85	A I	-	-	[5]	-	4912.034	Er	2	-	-	-	4905.638	Ir	3	2	-	-
4917.84	Re	4	-	-	Me	4912.030	Ni I	100	-	-	-	4905.487	W	12	-	-	-
4917.72	Cl II	-	-	[125]	-	4912.014	Yt	2 h	-	-	-	4905.215	Er	2	-	-	-
4917.495	Mn	12	-	-	-	4911.96	Tb	2	-	-	Ed	4905.20	Xe	-	-	[2 h]	-
4917.491	Eu	3	-	-	-	4911.800	Fe I	10	-	-	-	4905.182	Fe I	10	-	-	-
4917.410	Sm II	15 d	-	-	-	4911.668	U	6	5	-	-	4905.126	La I	8	2	-	-
4917.385	Nd	4	-	-	-	4911.664	Zn II	15	-	-	[25]	4905.083	Zr I	3	-	-	-

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
		Arc	Spk., [Dis.]			Arc	Spk., [Dis.]			Arc	Spk., [Dis.]
4905.050	Cr	30	-	4899.580	Mo	25	25	4892.585	Pr	3	-
4905.022	Ru I	12	-	4899.522	Co I	400 W	-	4892.503	Cb	5	2
4904.978	Sm	60	-	4899.462	Pr	2	-	4892.438	W	25	-
4904.880	Co	12	-	4899.294	U	25	25	4892.228	Ne I	-	[10] Ps
4904.88	Lu	60	5	4899.252	Ru I	12	-	4892.090	Ne I	-	[500] IMe
4904.869	V	4	3	4899.248	Dy	4	-	4892.053	Pr	10 w	-
4904.76	Cl II	-	[125] Ks	4899.215	Os	60	-	4892.01	Tb	3	-
4904.75	A II	-	[30] Rt	4899.151	Th	3	2	4891.980	Sr I	40	-
4904.7	bh V	2	-	4899.013	Ne I	-	[50] Ps	4891.940	Sm	40	-
4904.661	Cl II	-	[18] Mu	4898.812	Th	10	-	4891.828	Ti I	12	-
4904.591	Ta	80 W	2	4898.76	Al II	-	[30] Sy	4891.67	Er	3	-
4904.530	Cb	10	8	4898.616	U	4	3	4891.600	V	12	-
4904.52	Hf II	12	25	4898.52	Al II	-	[8] Sy	4891.54	I	-	[15] Bl
4904.444	Ir	8	7	4898.499	Cb	3	1	4891.498	Fe I	70	15
4904.442	V I	8	7	4898.461	Th	12	-	4891.466	Sm	2	-
4904.432	Er	2	-	4898.207	Ce	4	-	4891.43	La II	-	10 Me
4904.43	Te	-	[100] Bl	4898.161	Er	3 s	-	4891.11	Ti I	5	-
4904.43	La II	-	2 h Me	4897.961	Tb	2	-	4891.1	Rn	-	[35] Wa
4904.413	Ni I	400 W	1	4897.924	Ne I	-	[70] Ps	4891.063	Nd	40	-
4904.412	Pr	3	-	4897.886	Pr	3	-	4891.02	Eu	2	-
4904.387	Mo	10	4	4897.88	Rh I	5	-	4890.893	W	12	-
4904.339	V I	3	10	4897.827	Sm	3	-	4890.85	O II	-	[30] Mh
4904.289	V I	8	7	4897.56	Se II	-	[8] Bl	4890.769	Fe I	100	15
4904.173	Co I	80	-	4897.35	Tb	4	-	4890.761	Sm	2	-
4903.84	Tb	2	-	4897.285	Pr	3	-	4890.753	Cb	15	8
4903.811	Mo	80	30	4897.2	Kr	-	[3] Me	4890.701	Nd	30	-
4903.744	Re	10 w	-	4897.186	Co	15	-	4890.440	Th	3	-
4903.72	Yb	-	8 h Me	4897.109	Dy	3	-	4890.335	Sc	3	1 h
4903.65	Dy	2	-	4897.078	Ce	10	-	4890.329	Sm	3	-
4903.619	Er	5	-	4896.958	Er	2	-	4890.288	W	15	-
4903.367	Pr	5	-	4896.934	Nd	60	-	4890.27	Hg I	-	[15] Wd
4903.323	Ir	3	-	4896.9	Hg I	-	[5] Wd	4890.264	Pr	15	-
4903.317	Fe I	500	2	4896.845	Tb	2	-	4890.102	Dy	8	2
4903.24	Ra I	-	[10] Rs	4896.784	W	3	-	4890.09	Xe II	-	[150 h] Hu
4903.239	Cr I	125	-	4896.78	I I	-	[35] Mu	4898.96	Ca	-	2 l Ad
4903.053	Ru I	60	-	4896.77	Cl II	-	[200] Ks	4889.89	Hf	2 h	1 h Me
4903.04	Hf	2	3	4896.32	Hf	4	4	4889.831	Ru	4	-
4902.968	W	12	3	4896.188	Tb	2	-	4889.690	Cu II	-	10 Sh
4902.898	Ba I	15	3	4896.173	Re	2	-	4889.663	Pr	5	-
4902.776	Th	4	-	4896.135	Pr	25	-	4889.587	Ce	20	-
4902.77	Al II	-	[30] Sy	4895.858	Dy	5	-	4889.557	Cb	3	2
4902.5	bh Zr	8	-	4895.663	Th	3	-	4889.325	Dy	5	3
4902.450	In II	-	[5] Ps	4895.6	Pb II	-	[2] Ea	4889.216	Mo	25	5
4902.44	S	-	[15] Bl	4895.597	Ru I	12	5	4889.203	Gd	60	-
4902.324	W	15	-	4895.585	Cb	5	1	4889.17	Re I	2000 w	-
4902.27	Au	8	5	4895.320	Ru I	10	-	4889.106	Nd	8	-
4902.180	Os	2	-	4895.268	Os	8	-	4889.06	A	-	[3] Rt
4902.041	Nd	15	-	4895.0	Sb II	-	6	4889.04	Nd	-	3 Kn
4901.906	Dy	2	-	4894.985	Yb	2	10	4889.009	Fe I	2 wh	150 h
4901.903	Sm II	40 d	-	4894.954	Th	10	-	4888.874	Er	3	-
4901.862	La I	50	-	4894.94	Te	2	[150] Bl	4888.74	As II	-	50 Ro
4901.862	Ru I	5	-	4894.93	Tb	2	-	4888.651	Fe I	2	1
4901.850	Nd	35	-	4894.913	Pr	3	-	4888.607	Ru	6	-
4901.85	B	-	2	4894.774	Ce	5	-	4888.530	Cr I	100	-
4901.676	Ce	12	-	4894.692	A I	-	[150] Ms	4888.52	P	-	[30 d] Gu
4901.620	Er	2	-	4894.68	Eu	10 W	2	4888.509	Ir	2 wh	-
4901.545	Nd	30	-	4894.61	Yb	20	-	4888.389	W	20	-
4901.483	Pr	5	-	4894.359	Cr	30	-	4888.365	Ne I	-	[5] Ps
4901.412	Cu II	-	7	4894.352	Tb	3	-	4888.28	Ag	9	20
4901.26	A	-	[2] Ms	4894.320	Gd	200	4	4888.14	Lu	2 h	-
4901.14	Te	-	[30] Bl	4894.300	Sm II	60	-	4888.087	Dy	5	2
4901.066	Ru I	7	-	4894.232	La	4	-	4887.947	A I	-	[200] IMe
4901.01	Sm II	10 d	-	4894.210	V I	9	8	4887.92	Rh	2	-
4900.962	Ti	4	-	4894.172	Zr I	3	-	4887.715	Cr	15	-
4900.88	Mn	10 d	5 h	4893.97	I	-	[8] Bl	4887.617	La I	2	-
4900.838	Eu	25	2	4893.968	Ce	10	-	4887.45	Tb	2	-
4900.792	Cb	5	5	4893.765	Sm	3	-	4887.333	Nd	2	-
4900.737	Sm II	100	-	4893.684	Dy	4	-	4887.30	Xe II	-	[150 h] Hu
4900.718	Mn	8	-	4893.58	Te	-	[70] Bl	4887.158	Mo	20	10
4900.625	Ti I	7	-	4893.48	Yb	6	-	4887.013	Cr	125	30
4900.624	V I	20	15	4893.451	Yt I	8	2	4886.992	Ni I	30	-
4900.610	Tb	2	-	4893.433	Ti	7	-	4886.990	Co I	5	-
4900.48	Si	2	-	4893.337	Sm II	150	-	4886.99	Se I	-	[70] Rd
4900.456	Mo	-	5	4893.3	bh Sc	4	-	4886.976	Pr	3	-
4900.436	U	5	4	4893.225	Ce	2	-	4886.970	Sm	3	-
4900.121	Yt II	20	300	4893.221	Nd	10 d	-	4886.912	W	50	10
4900.108	Er	30	20	4893.121	Zr I	5	-	4886.822	La	2	-
4900.10	Dy	3	-	4893.061	Ti I	10	-	4886.804	V I	9	8
4899.971	Ba II	30 h	200 l	4893.0	bh Sc	3	-	4886.725	Ni I	2	-
4899.924	La II	400	200	4892.941	Pr	2 h	-	4886.656	Yt I	4	2 h
4899.921	Pr	4	-	4892.858	Ce	8	-	4886.613	Sm	2	-
4899.912	Ti I	150	20	4892.841	Ru I	5	-	4886.473	Mo	25	15
4899.901	Ce	30	-	4892.663	Sr I	15	-	4886.43	Tb	2	-
4899.8	bh Zr	8	-	4892.615	U	3	3	4886.346	Fe I	5	-
4899.64	Al II	-	[15] Sy	4892.60	Dy	3	-	4886.332	U	5	6

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
4886.30	N	-	[5]	Du	4881.530	Ta	2	-	-	4875.616	Sm	10 d	-	-
4886.299	Er	15	-	-	4881.449	Yt II	2	2	-	4875.576	Tb	20	-	-
4886.291	Yt I	4	8	-	4881.376	Gd	50	-	-	4875.53	Te	-	[15]	Bl
4886.29	A I	-	[30]	Ms	4881.3	Li II	-	[3]	Wr	4875.525	Cr	12	-	-
4886.170	Dy	2	-	-	4881.241	Zr II	4	-	-	4875.478	V I	40 h	20 h	-
4886.050	Sm	2	-	-	4881.160	Tb	15	2	-	4875.459	Dy	3	-	-
4886.045	Pr	20	1	-	4881.08	Gd	60	-	Ed	4875.454	W	7	-	-
4885.957	Cr	15	-	-	4881.054	Er	2 w	-	-	4875.430	Pd	25	2	-
4885.776	Cr I	60	-	-	4880.957	Pr	4	-	-	4875.380	W	5	-	-
4885.775	Cb	3	1	-	4880.912	Ti I	12	-	-	4875.114	Mo	4	4	-
4885.74	Hf II	2	4	m	4880.791	Mo	10	10	-	4875.025	Ru	12	-	-
4885.647	V I	7	6	-	4880.718	Cb	5	1	-	4875.016	Pr	9	-	-
4885.640	Mo	5	3	-	4880.703	W	10	-	-	4874.920	U	2 h	1 h	-
4885.63	S II	-	[30]	Hn	4880.565	V I	20	15	-	4874.844	Re	5	-	-
4885.627	Rb II	-	10	Rr	4880.452	Nd	2	-	-	4874.812	Pr	4	-	-
4885.443	Tb	2	-	-	4880.20	La II	-	10 h	Me	4874.809	Ni I	25	-	-
4885.436	Fe I	2	-	-	4880.167	Dy	5	-	-	4874.651	Cr	20	-	-
4885.324	Mo	5	4	-	4880.036	Cr	25	-	-	4874.60	Tb	2	-	Ed
4885.22	Te	-	[100]	Bl	4880.01	Sb II	-	[2]	Lj	4874.378	Sm	4	-	-
4885.19	Xe	-	[2 h]	Hu	4879.902	Tb	3	-	-	4874.367	Th	6	-	-
4885.126	U	18	-	-	4879.90	A	-	[300]	Rt	4874.362	Nd	2	-	-
4885.085	Ti I	150	25	-	4879.896	Er	4	1	-	4874.350	Ce	8	-	-
4885.084	Ne I	-	[100]	Ps	4879.792	Nd	8	-	-	4874.348	U	6	-	-
4885.008	Nd	8	-	-	4879.75	Sm	3	-	-	4874.326	Ru I	10	-	-
4885.006	Ru	7	-	-	4879.695	W	10	-	-	4874.18	Ag	30	-	Kp
4884.949	Mo	5	5	-	4879.645	Yt I	3	2 h	-	4874.111	Tb	4 w	-	-
4884.949	Cr I	25	-	-	4879.533	Pt	20	-	-	4873.854	Sm	8	-	-
4884.915	Ne I	-	[1000]	Ime	4879.522	Pr	5	-	-	4873.779	U	-	2 h	-
4884.82	I I, II	-	[25]	Db	4879.484	Eu	3 W	-	-	4873.688	Pr	15 r	-	-
4884.75	Tb	2	-	Ed	4879.35	Sm II	5	-	-	4873.437	Ni I	200	2 h	-
4884.546	Dy	3	-	-	4879.347	Th	5	-	-	4873.350	Gd	200	2	-
4884.455	Pr	12	-	-	4879.25	Ir I	2	-	Me	4873.291	Cu II	5	-	Sh
4884.332	Mo	10	4	-	4879.21	Tm	10	-	Me	4873.199	Sm	30	-	-
4884.315	Pr	6	-	-	4879.167	Eu	3	3	-	4873.166	Dy	3	-	-
4884.15	Xe II	-	[50 wh]	Hu	4879.158	Th	3	-	-	4872.958	Pr	10 w	-	-
4884.143	Dy	2	-	-	4879.144	Ta	25	1	-	4872.94	Hf	6	2	Me
4884.13	I II	-	[15]	Mu	4879.121	Pr	30 w	-	-	4872.926	Th	20	-	-
4884.102	Zr I	3	-	-	4879.0	Al	-	5 W	Gn	4872.858	Ce	4	-	-
4884.060	V	-	6 h	-	4878.99	Sm	2	-	-	4872.73	A I	-	[10]	Ms
4884.055	Eu	15	3	-	4878.848	La I	20	30	-	4872.493	Sr I	25	-	ISn
4883.983	Sm	80	-	-	4878.8	In I	3	2	Ps	4872.479	Er	6	1	-
4883.950	Ta	150	3	-	4878.731	Th	8	-	-	4872.33	P	-	[50]	Gu
4883.86	A I	-	[5]	Ms	4878.518	Os	18	-	-	4872.146	Fe I	100	30	-
4883.815	Nd	60	-	-	4878.510	U	8	-	-	4872.099	Er	25	3	-
4883.779	Sm	60	-	-	4878.37	A	-	[2]	Ms	4872.00	Tb	3	-	Ed
4883.778	U	10	8	-	4878.367	Mo	25	10	-	4871.961	Ce	4	-	-
4883.693	Yt II	20	300	-	4878.33	Er	4	1	-	4871.703	Ta	50 w	1	-
4883.673	Er	30 h	-	-	4878.283	W	30	-	-	4871.524	Gd	100	-	-
4883.65	P	-	[30]	Gu	4878.218	Fe I	80	4	S	4871.48	O II	-	[40]	Mh
4883.598	Zr I	6	-	-	4878.154	Sc I	3	1	-	4871.42	Tb	2	-	Ed
4883.53	Xe II	-	[300 h]	Hu	4878.15	Hf	3	3	Me	4871.325	Fe I	200	100	-
4883.51	Si	4	2	Sy	4878.132	Ca I	100	10	IWg	4871.325	Sm	2	-	-
4883.420	V	1	20 h	-	4878.04	Tb	2	-	Ed	4871.257	V I	20	15	-
4883.403	Ne I	-	[15]	Ps	4878.012	Tb	3	-	-	4871.16	Yb	-	8 h	Me
4883.27	A I	-	[30]	Ms	4878.002	U	5	5	-	4870.845	Ni I	100	-	-
4883.265	Hf II	-	4	-	4877.882	Ru	7	-	-	4870.832	Pr	6	-	-
4883.205	Gd	100	-	-	4877.823	Pr	50 w	5 w	-	4870.796	Cr	150	25	-
4883.2	Be	-	2	Sx	4877.817	Th	6	-	-	4870.557	La I	8	-	-
4883.1	Hg I	-	[8]	Wd	4877.650	Ba I	30 wh	8	Sz	4870.44	Er	2	-	Ed
4882.885	Nd	6	-	-	4877.58	Hf	20	2	Mo	4870.395	Pr	5	-	-
4882.75	Tb	2	-	Ed	4877.578	Sm II	10	-	-	4870.19	Rh	2	-	Me
4882.718	Co I	10	-	-	4877.408	Ru	7	-	-	4870.158	Ce	2	-	-
4882.462	Ce	30	-	-	4877.34	Os	3	-	Me	4870.14	Kr II	-	[20 whs]	Me
4882.456	Th	5	20 wh	-	4877.24	Sb II	-	[60]	Lp	4870.137	Ti I	100	18	-
4882.40	Lu	3 h	-	Me	4877.22	Sn II	-	[7]	Mc	4870.108	Pr	5	-	-
4882.346	Ti I	25	1	-	4877.19	Tb	2	-	Ed	4870.049	Gd	200	10	-
4882.285	Os	12	-	-	4877.010	Th	12	-	-	4870.024	Cs II	-	[30]	Sv
4882.28	Ra I	-	[6]	Rs	4876.98	P	-	[50 I]	Gu	4869.982	Sm II	125	-	-
4882.28	Tb	2	-	Ed	4876.938	Re	2	-	-	4869.785	Ru	7	-	-
4882.25	A	-	[10]	Rt	4876.772	Tb	2	-	-	4869.703	Re	5 Wl	-	-
4882.245	Pr	20	-	-	4876.709	W	7	-	-	4869.70	K I	10	-	Fl
4882.18	I	-	[15]	Bl	4876.50	Xe II	-	[200 hl]	Hu	4869.62	Dy	3	-	Ed
4882.165	V I	3	2	-	4876.492	Th	3	-	-	4869.518	Tb	5	-	-
4882.04	Cd II	-	10	Tk	4876.366	Cr II	2	15	-	4869.385	Co I	10	-	-
4881.979	Dy	2	-	-	4876.325	Sr	200	60	-	4869.333	Pr	10	-	-
4881.940	Gd	100	20	-	4876.260	A I	-	[200]	IMo	4869.279	Nd	4	-	-
4881.937	Ta	30	1	-	4876.257	Pr	20	-	-	4869.198	Mo	25	20	-
4881.867	Mo	5	3	-	4876.124	Tb	3	-	-	4869.19	Sr I	3 h	-	-
4881.79	N	-	[4]	Du	4876.112	Nd	3	-	-	4869.153	Ru I	125	-	-
4881.724	Fe I	3	-	-	4876.1	bh Zr	8	-	L	4868.987	Cb	10	10	-
4881.709	Nd	5	-	-	4876.06	Sr I	6	2	Fl	4868.93	Th	2	-	Ed
4881.697	Cb	2	1	-	4875.973	Gd	100	10	-	4868.907	La	4	-	-
4881.572	Mn	10	-	-	4875.924	Dy	3	-	-	4868.892	Mo	3	2	-
4881.557	V I	40 h	30 h	-	4875.837	Nd	6	-	-	4868.880	Th	5	-	-
4881.540	Ce	6	-	-	4875.718	Nd	6	-	-	4868.856	U	8	2 h	-

4868.7—4851.9 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4868.729	Ru	7	-	-	4863.111	Ru I	10	-	-	4858.222	Mo	20	20	-
4868.713	Mo	3	2	-	4863.107	Yt	2	-	-	4858.2	bh V	2	-	L
4868.700	Sr I	20	-	ISn	4863.1	bh Zr	12	-	L	4858.1	bh Sc	30	-	Me
4868.635	Ce	8	-	-	4863.083	W	12	-	-	4858.085	U	15	15	-
4868.329	U	-	5 h	-	4863.079	Ne I	-	[100]	IMe	4858.081	Sc	5	1 h	-
4868.274	Th	5	1	-	4862.83	P	-	[15]	Gu	4858.001	Ir	2	-	-
4868.268	Ne I	-	[70]	Ps	4862.728	Pr	4	-	-	4858.000	Ru	4	-	-
4868.263	Ti I	100	8	I	4862.609	V I	15	12	-	4857.91	Dy	2 h	-	Ed
4868.234	Pr	4	-	-	4862.608	Gd	100	2	-	4857.8	bh Sc	20	-	Me
4868.22	Ho	2	-	Ex	4862.54	Xe II	-	[400 hl]	Hu	4857.425	Er	10	-	-
4868.058	Dy	5	2	-	4862.527	Ta	15	-	-	4857.382	Ni I	100	-	-
4868.004	Mo	50	40	-	4862.393	Pt	3	-	-	4857.365	Pr	15	-	-
4867.986	V	3	2	-	4862.310	Pr	3	-	-	4857.31	Dy	2 h	-	Ed
4867.878	Co I	800 W	100	-	4862.31	I I	-	[700]	Ke	4857.291	Cr I	25	-	-
4867.84	Tb	3	-	Ed	4862.27	Ra I	-	[4]	Rs	4857.20	Kr II	-	[150]	Me
4867.84	A I	-	[10]	Ms	4862.13	I I, II	-	[25]	Bl	4857.165	Sm	2	-	-
4867.839	Nd	6	-	-	4862.1	Kr	-	[2 h]	Me	4857.15	Re	6	-	Me
4867.75	Br	-	[10]	Bl	4862.08	Sm	3	-	-	4857.04	Cl II	-	[10]	Ks
4867.602	Eu	30	3	-	4862.054	Mn	40	5	-	4856.76	O II	-	[20]	Mh
4867.59	A II	-	[5]	Rt	4862.00	Dy	2	-	Ed	4856.738	Gd	80	-	-
4867.391	Pr	15	-	-	4861.965	Pr	5	-	-	4856.714	Yt I	6	6	-
4867.375	La I	2 h	-	-	4861.867	Ru	15	-	-	4856.709	Er	12	-	-
4867.177	Os	8	-	-	4861.842	Cr	125	8	-	4856.675	U	10	-	-
4867.08	I I	-	[3]	Db	4861.84	Kr I	-	[2 h]	Me	4856.57	Ra I	-	[100]	Rs
4867.010	Ne I	-	[70]	Ps	4861.802	Gd	100	-	-	4856.49	O II	-	[15]	Fl
4866.853	Cb	15	1	-	4861.771	Nd	2	-	-	4856.240	In II	-	[30]	Ps
4866.75	Rh	2	-	Me	4861.732	Ce	10	-	-	4856.238	Dy	5	2	-
4866.735	Nd	35	-	-	4861.589	Er	5	1	-	4856.2	Rn	-	[35]	Wa
4866.70	Br	-	[20]	Bl	4861.49	Hf	3	2	Me	4856.193	Gd	80	-	-
4866.581	Sm	2	-	-	4861.378	Rh	4	-	-	4856.080	Pr	9	-	-
4866.52	Br	-	[4]	Bl	4861.327	H	-	[500]	m	4856.03	K I	6	-	Fl
4866.476	Ne I	-	[80]	IMe	4861.215	Th	8	-	-	4856.012	Ti I	100	-	I
4866.42	Tb	3	-	Ed	4861.21	Tb	2	-	Ed	4855.72	Hg II	-	[100]	Ps
4866.408	Gd	100	2	-	4861.205	Cr I	80	-	-	4855.686	Fe I	8	1	-
4866.398	Eu	2	-	-	4861.050	Sm	4	-	-	4855.581	Dy	2	-	-
4866.267	Ni I	300 w	1	-	4861.043	Ta	3	1	-	4855.414	Ni I	400 w	1	-
4866.22	Te	-	[800]	Bl	4861.015	U	10	10	-	4855.361	Rb II	-	20	Rr
4866.119	Pr	3	-	-	4860.93	O II	-	[20]	Mh	4855.322	Pr	6	-	-
4866.060	Zr I	10	-	-	4860.908	La II	100	100	-	4855.318	Nd	10	-	-
4865.91	A I	-	[10]	Ms	4860.893	W	100	-	-	4855.146	Cr I	20	-	-
4865.823	Mo	8	8	-	4860.86	Eu	12 W	-	Kn	4855.045	Sr I	20	-	ISn
4865.783	Rh I	10	-	-	4860.755	Mo	10	8	-	4855.005	Ce	5	-	-
4865.68	Dy	2 h	-	Ed	4860.697	Sm	2	-	-	4854.966	Cu II	-	10	Sh
4865.620	Ti II	-	3	-	4860.67	Dy	3	-	Ed	4854.949	La I	15	-	-
4865.598	Os	80	1	-	4860.556	Mo	5	4	-	4854.940	Os	3	-	-
4865.505	Ne I	-	[100]	IMe	4860.443	Ru	6	-	-	4854.866	Yt II	100	150	-
4865.43	Hf II	5	10	m	4860.35	N II	-	[5]	Fl	4854.857	Er	40 s	-	-
4865.397	Sm II	9	-	-	4860.162	Ru	4	-	-	4854.813	Tb	4	-	-
4865.36	Lu	4	20	Me	4860.05	Dy	2 h	-	Ed	4854.810	Mn	30	5	-
4865.237	Pr	40	2	-	4860.050	Mo	25	20	-	4854.719	Nd	8	-	-
4865.13	Te	-	[50]	Bl	4860.04	Br	-	[12]	Ks	4854.69	P	-	[70]	Gu
4865.088	Ru	12	-	-	4859.953	Pr	10	-	-	4854.604	Mn	15	5	-
4865.042	Gd	400	10	-	4859.88	Tb	2	-	Ed	4854.564	Ru I	10	-	-
4864.95	O II	-	[30]	Fl	4859.852	Sm	5	-	-	4854.469	Mo	3	3	-
4864.92	Ga	-	4	Kl	4859.847	Yt I	50	5	-	4854.425	Er	2	1	-
4864.91	Kr I	-	[2 h]	Me	4859.750	U	8	8	-	4854.375	Sm II	125	-	-
4864.743	Mo	3	3	-	4859.748	Fe I	150	40	S	4854.246	Yt I	3	2	-
4864.737	V I	30 wh	25 wh	-	4859.604	Ne I	-	[15]	Ps	4854.090	W	30	-	-
4864.664	Ta	20 h	2	-	4859.592	Nd	10	-	-	4853.928	Pt I	15	-	-
4864.534	Er	3	1 h	-	4859.568	Sm II	80	-	-	4853.845	W	10	-	-
4864.51	I II	-	[25]	Mu	4859.515	Eu	2	-	-	4853.77	Xe II	-	[30]	Hu
4864.38	P II	-	[50 I]	Gu	4859.480	Ce	15	-	-	4853.684	Pr	20	-	-
4864.37	Tb	2	-	Ed	4859.471	Os	3	-	-	4853.611	Ce	6	-	-
4864.352	Ta	5	-	-	4859.44	A	-	[5]	Ms	4853.504	Ru	6	-	-
4864.351	Ne I	-	[30]	Ps	4859.41	Ra II	-	[100]	Rs	4853.336	Nd	10	-	-
4864.312	Cr II	3	12	-	4859.37	F II	-	[50]	Di	4853.19	I II	-	[15]	Bl
4864.282	Ni I	20	-	-	4859.34	He II	-	[7]	Ps	4853.138	Tb	2	-	-
4864.24	Cs	-	[10]	Bs	4859.31	Ca	-	3 h	-	4853.117	Er	7	-	-
4864.229	Sm II	15 d	-	-	4859.237	Hf	30	5	-	4852.865	Th	5	-	-
4864.201	Nd	2	-	-	4859.232	Gd	50	-	-	4852.72	Cl I	-	[8]	Ks
4864.182	Ti I	18	1	-	4859.18	La II	-	5 h	Me	4852.705	Ce	5	-	-
4864.10	Te	-	[800]	Bl	4859.119	V	7	6	-	4852.692	Yt I	30	15	-
4864.009	Os	6	-	-	4859.06	Dy	2 h	-	Ed	4852.684	Ta	10	2	-
4863.931	Ni I	30	-	-	4859.038	Pr	40 w	-	-	4852.681	Sc I	5	6	-
4863.868	Pr	15	-	-	4859.030	Nd	60	60	-	4852.679	Er	45	-	-
4863.81	Tb	4	-	m	4858.892	Tb	4	-	-	4852.655	Ne I	-	[100]	IMe
4863.655	Fe I	2	-	-	4858.75	Lu	2	8	Me	4852.619	Ce	5	-	-
4863.61	Er	2	-	m	4858.716	Ce	6	-	-	4852.61	Kr II	-	[2]	Me
4863.61	K I	6	-	Fl	4858.606	W	15	-	-	4852.598	Re	3 wh	-	-
4863.550	Nd	2 h	-	-	4858.585	Pr	9	-	-	4852.560	Ni I	150	-	-
4863.461	Co I	5	-	-	4858.470	Os	2	-	-	4852.527	Dy	2	-	-
4863.27	Hf	20	3	Me	4858.468	Er	8	3	-	4852.166	Ta	80	2	h
4863.259	Ce	10	-	-	4858.414	Hf	15	4	-	4852.16	Ca	-	-	Ad
4863.182	Th	20	10	-	4858.306	Th	10	2	-	4852.03	Eu	5	-	Kn
4863.126	Pr	4	-	-	4858.30	Sn	-	5	Ar	4851.934	Ru	5	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4851.890	Cb	3	1	-	-	4846.301	Cr	18	-	-	-	4840.885	Sc I	-	-	3 h	-
4851.879	Os	8	-	-	-	4846.13	As II	-	-	10	Ro	4840.874	Ti I	125	25	I	-
4851.700	Mo	15	15	-	-	4845.973	Pr	20	-	-	-	4840.826	Th	8	-	-	-
4851.635	Er	6	-	-	-	4845.91	Ru	4	-	-	-	4840.768	Ir	5	3	-	-
4851.634	Rh	80	30	-	-	4845.767	Ne I	-	-	[5]	Ps	4840.738	Pr	20 I	-	-	-
4851.583	Cs	-	[8]	Sv	-	4845.72	Dy	2	-	-	Ed	4840.63	Se II	-	[800]	Bl	-
4851.525	Sm	4	-	-	-	4845.675	Yt I	30	30	-	-	4840.480	Eu	15	3	-	-
4851.501	Ne I	-	[60]	Ps	-	4845.67	Re	2	-	-	-	4840.476	Pr	5	-	-	-
4851.485	V I	40	30	-	-	4845.656	Fe I	3	-	-	-	4840.467	Dy	5	2 h	-	-
4851.481	Pr	9	-	-	-	4845.655	Eu	50	-	-	-	4840.467	Sc I	1	2	-	-
4851.476	Dy	4 h	-	-	-	4845.62	Eu	1 w	2	-	Kn	4840.462	Er	2	-	-	-
4851.465	Cr	35	-	-	-	4845.614	Tb	2	-	-	-	4840.458	Th	12	3	-	-
4851.382	Ir	2	-	-	-	4845.610	Pr	5	-	-	-	4840.440	Cr	4	-	-	-
4851.363	Zr I	15	-	-	-	4845.517	Ce	20	2	-	-	4840.39	Tb	4	-	-	Ed
4851.248	Cu II	-	5	Sh	-	4845.377	Ir	6	-	-	-	4840.266	Co I	700 w	150	-	-
4851.246	Eu	2	-	-	-	4845.369	Sm	3	-	-	-	4840.148	Mn	50	-	-	-
4851.15	Yb	10	10	-	-	4845.184	Pr	4	-	-	-	4840.001	La II	35	10	-	-
4851.10	Mg II	5	-	Fl	-	4845.172	Mo	20	20	-	-	4839.866	Yt I	20	25	-	-
4851.05	I	-	[8]	Bl	-	4845.171	Cb	8	5	-	-	4839.854	Er	35	-	-	-
4850.84	Ba II	-	[5]	Rs	-	4845.145	Ne I	-	-	[15]	Ps	4839.767	Ru I	12	-	-	-
4850.817	La I	20	3	-	-	4845.14	Kr II	-	-	[2 h]	Me	4839.629	Re	5	-	-	-
4850.666	Pr	10	-	-	-	4844.96	Se II	-	-	[800]	Bl	4839.62	Lu	50	100	-	Me
4850.607	Hf	10	3	-	-	4844.949	Mo	4	4	-	-	4839.61	Tb	20	-	-	Ed
4850.584	La II	25	20	-	-	4844.89	Tb	6	2	m	-	4839.587	Mo	20	20	-	-
4850.50	Sb II	-	[2]	Lg	-	4844.87	Dy	2	2	Ed	-	4839.545	Fe I	5	1	-	-
4850.46	I	-	[25]	Bl	-	4844.86	Br	-	-	[20]	Bl	4839.540	Pr	25	1	-	-
4850.45	Th	12	4	-	-	4844.759	Th	3	-	-	-	4839.531	Er	3	-	-	-
4850.39	Tb	2	-	Ed	-	4844.716	U	3	2	-	-	4839.516	La I	40	10	-	-
4850.277	Pr	10	-	-	-	4844.564	Th	8	2	-	-	4839.433	Sc I	9	6	-	-
4850.26	I I	-	[25]	Db	-	4844.557	Ru I	20	-	-	-	4839.336	Pr	8	-	-	-
4850.2	bh Zr	20	-	L	-	4844.44	Lu	3	-	-	Me	4839.251	Ti I	15	-	-	-
4849.914	Ce	10	-	-	-	4844.333	Xe II	-	-	[1000]	IMe	4839.147	Yt I	3	2	-	-
4849.88	K I	3	-	Fl	-	4844.315	Mn	80	5	-	-	4839.07	V	-	3 h	-	Me
4849.831	Mo	12	10	-	-	4844.30	Eu	2	-	-	Kn	4839.07	Eu	3 W	-	-	-
4849.771	Ir	2	-	-	-	4844.25	P	-	-	[30]	Gu	4839.04	Kr II	-	4 h	-	Me
4849.7	bh Zr	8	-	L	-	4844.218	Pr	8	-	-	-	4839.014	Ru I	15	-	-	-
4849.647	Eu	15 w	2	-	-	4844.212	Sm II	150	-	-	-	4838.99	Eu	20 W	-	-	Kn
4849.554	Ce	4	-	-	-	4844.124	Th	10	4	-	-	4838.980	Zr I	3	-	-	-
4849.530	Ne I	-	[30]	Ps	-	4844.045	Er	2	-	-	-	4838.961	Er	3	-	-	-
4849.445	Tb	2	-	-	-	4844.016	Fe	2	-	-	-	4838.952	Ce	6	-	-	-
4849.37	Br I	-	[25]	Ks	-	4844.00	Hf II	10	15	Me	-	4838.775	Zr I	4	-	-	-
4849.217	Os	18	-	-	-	4843.99	Rh	100	60	Me	-	4838.651	Ni I	150	4	-	-
4849.064	Nd	15	-	-	-	4843.983	Ti I	8	-	-	-	4838.645	Sm	4	-	-	-
4849.028	Th	8	4	-	-	4843.868	Os	25	-	-	-	4838.616	Pr	15	-	-	-
4848.822	Er	9	-	-	-	4843.828	W	50	12	-	-	4838.53	Br	-	[5]	Bl	-
4848.812	V I	6 h	5 h	-	-	4843.746	Ru	5	-	-	-	4838.449	Ce	2	-	-	-
4848.75	Br II	-	[150]	Bl	-	4843.74	Sb II	-	-	[20]	Lg	4838.442	Cr	10	-	-	Ed
4848.605	V	5	-	-	-	4843.73	Dy	2 h	-	-	Ed	4838.41	Tb	2	-	-	Ed
4848.547	Pr	125 w	-	-	-	4843.491	U	5	-	-	-	4838.40	Dy	2	-	-	Ed
4848.468	Ti I	60	2	-	-	4843.461	Co I	300	-	-	-	4838.363	Th	8	2	-	-
4848.46	Hf II	5	20	m	-	4843.46	Ba II	-	-	[80]	Rs	4838.27	Sb II	-	[10]	Lg	-
4848.46	Yb	3	20 h	-	-	4843.414	Dy	3 h	2 h	-	-	4838.244	Mn	50	-	-	-
4848.435	Re	25 w	-	-	-	4843.372	Eu	2	-	-	-	4838.162	Ru I	5	-	-	-
4848.369	Cb	150	100	-	-	4843.304	La	5	10	-	-	4838.141	Eu	3	2	-	-
4848.361	Th	8	-	-	-	4843.293	Xe I	-	-	[300]	IMe	4838.122	Os	2	-	-	-
4848.329	Sm	100	-	-	-	4843.19	Mn	15	-	-	-	4838.113	Mo	15	15	-	-
4848.273	Cr II	2	15	-	-	4843.165	Ni I	20	-	-	-	4837.990	Cb	15	1	-	-
4848.175	Mo	4	3	-	-	4843.153	Cr	2	-	-	-	4837.93	N	-	[2]	Du	-
4848.16	Ru I	6	-	-	-	4843.150	Fe I	4	-	-	-	4837.835	Er	3	-	-	-
4848.156	Ag	-	2 h	-	-	4843.033	Ce	8	-	-	-	4837.75	Dy	2	-	-	Ed
4848.108	Gd	60	10	-	-	4843.03	Lu	2	5	Me	-	4837.649	Sm II	100	-	-	-
4847.90	A	-	[80]	Rt	-	4842.998	V I	4	3	-	-	4837.624	Cb	5	2	-	-
4847.858	Ru	5	-	-	-	4842.98	Er	2	-	-	Ed	4837.599	Tb	10	2	-	-
4847.766	Sm II	150	-	-	-	4842.941	Ne I	-	-	[50]	Ps	4837.492	W	10	-	-	-
4847.754	Ce	12	-	-	-	4842.88	Te	-	-	[50]	Bl	4837.487	Ce	8	-	-	-
4847.695	Zr I	3 wh	-	-	-	4842.693	Tb	8	-	-	-	4837.465	Yb	10	-	-	-
4847.688	Sc I	12	2	-	-	4842.588	Pr	8	-	-	-	4837.460	Er	4	-	-	-
4847.660	U	10	10	-	-	4842.566	Ne I	-	-	[10]	Ps	4837.312	Ne I	-	[500]	IMe	-
4847.634	Er	2	-	-	-	4842.506	U	12	-	-	-	4837.27	Ra I	-	[6]	Rs	-
4847.38	N	-	[5]	Du	-	4842.5	bh Yt	3	-	-	Me	4837.23	Hf	35	4	-	-
4847.296	Ca I	3	-	-	-	4842.44	Cl II	-	-	[8]	Ks	4837.041	Pr	80 w	-	-	-
4847.285	Tb	2	2	-	-	4842.43	Rh I	50	-	-	-	4836.946	Yb	18	100	-	-
4847.234	Mo	3	3	-	-	4842.407	U	5	-	-	-	4836.857	Cr I	80	-	-	-
4847.2	bh Zr	18	-	L	-	4842.296	Ce	6	-	-	-	4836.79	Cl II	-	[20]	Ks	-
4847.177	Cr	10	-	-	-	4842.2	Rb	-	-	[4]	Dr	4836.734	Eu	2	-	-	-
4847.14	Ba II	-	[10]	Rs	-	4842.148	Cb	10	5	-	-	4836.691	A I	-	[150]	Ms	-
4847.069	Sm II	3	-	-	-	4842.030	Er	4	-	-	-	4836.669	Ce	15	-	-	-
4846.810	Ta	10 W	2	-	-	4842.0	bh Yt	5	-	-	Me	4836.666	Sm II	50	-	-	-
4846.73	A I	-	[5]	Ms	-	4841.88	Tb	2	-	-	Ed	4836.625	Nd	25	-	-	-
4846.643	Er	2	-	-	-	4841.876	Pr	3	-	-	-	4836.56	Kr II	-	[20 h]	Me	-
4846.60	Kr II	-	[700]	Me	-	4841.796	Cr	3	-	-	-	4836.428	Pd	8	-	-	-
4846.574	Ce	8	-	-	-	4841.772	Dy	3	2 h	-	-	4836.364	Cr	6	-	-	-
4846.447	Ta	100	2	-	-	4841.749	Ru	4	-	-	-	4836.3	Pb II	-	[6]	Ea	-
4846.401	Pr	6	-	-	-	4841.704	Sm	100	-	-	-	4836.229	Cr II	-	2 h	-	-
4846.352	Zr I	3	-	-	-	4841.553	Pr	5	-	-	-	4836.208	Er	5	-	-	-

4836.1—4819.9A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4836.132	Ti I	25	1	-	4830.8	Be	-	8	Sx	4825.736	Ru	5	-	-
4836.002	Pr	4	-	-	4830.78	Se II	-	[12]	Kh	4825.646	Eu	5	2	-
4835.982	Nd	15	-	-	4830.723	Er	5	-	-	4825.62	Hg	-	[70]	Ps
4835.97	A I	-	[30]	Ms	4830.715	Yb	2	-	-	4825.593	Mn	20	5	-
4835.90	Tb	2	-	Ed	4830.681	Sm II	8	-	-	4825.529	Ne I	-	[50]	Ps
4835.867	Fe I	2	-	-	4830.518	La II	8	4	-	4825.482	Nd	100	8	-
4835.85	S II	-	[8]	Hn	4830.513	Mo	125	100	-	4825.474	Pr	5	-	-
4835.77	Tm	20	-	Me	4830.338	Eu	20	2	-	4825.457	Ti I	10	1	-
4835.763	Mo	12	15	-	4830.265	W	5	-	-	4825.429	Ta	150	-	-
4835.722	Sm	2	-	-	4830.194	Pr	10	-	-	4825.42	Cs	-	[10]	Bs
4835.693	Cr	6	-	-	4830.161	Cs II	-	[30]	Sv	4825.390	Eu	2 W	-	-
4835.665	Nd	10	-	-	4829.950	Gd	30	-	-	4825.382	Sm	9	-	-
4835.447	Ce	3	-	-	4829.936	Mo	20	10	-	4825.207	Er	5	-	-
4835.437	Pr	9 d	-	-	4829.89	Re	4 w	-	Me	4825.18	Kr II	-	[300]	Me
4835.37	I I	-	[15]	Db	4829.865	Eu	3	-	-	4824.966	U	5	2 h	-
4835.321	Nd	2	-	-	4829.838	Ce	5	-	-	4824.668	Dy	3	1	-
4835.274	Gd	100	10	-	4829.708	Xe I	-	[400]	IMe	4824.664	Sm	10	-	-
4835.18	I	-	[25]	Bl	4829.692	Dy	5	3 h	-	4824.655	Pr	5	-	-
4835.03	Cs	-	[15]	Bs	4829.579	Sm II	200	-	-	4824.586	Tb	2	-	-
4835.019	W	15	-	-	4829.468	Pr	6 w	-	-	4824.561	Er	3	-	-
4834.84	Hf II	-	3	Me	4829.376	Cr I	200	40	-	4824.364	Tb	3	-	-
4834.830	Fe	10 w	-	-	4829.346	Yt	3	15 h	-	4824.357	Ru I	5	-	-
4834.74	Yb	2	8 h	-	4829.301	Cb	10	5	-	4824.288	Zr I	20	-	-
4834.737	Er	3	-	-	4829.298	Eu	6	2	-	4824.26	Eu	2	2	Kn
4834.713	Pr	8	-	-	4829.288	Ne I	-	[5]	Ps	4824.219	Pt	2	-	-
4834.65	Xe	-	[2]	Hu	4829.212	K II	-	[100]	Dm	4824.20	Ge II	-	10	Lg
4834.626	Sm II	100	-	-	4829.2	Rn	-	[35]	Wa	4824.185	Nd	10	-	-
4834.46	Br I	-	[25]	Ks	4829.037	Ce	5	-	-	4824.124	Cr II	4	35	-
4834.302	Tb	2	-	-	4829.028	Ni I	300 w	2 h	-	4824.07	S II	-	[40]	Hn
4834.244	Gd	125	25	-	4829.0	Sb II	-	8	Dv	4824.066	La II	150	150	-
4834.187	Hf	20	3	-	4828.890	Dy	5	-	-	4823.922	Cr	25	-	-
4834.10	A I	-	[30]	Ms	4828.84	Yt	-	12	Sy	4823.732	Dy	2	-	-
4834.044	Ce	10	-	-	4828.800	W	5	-	-	4823.516	Mn	400	80	-
4833.965	Mo	25	25	-	4828.736	Sm	2	-	-	4823.43	Os	8 h	-	-
4833.768	Dy	6	2	-	4828.683	Ru	7	-	-	4823.419	V	-	2 h	-
4833.7	Pb II	-	[5]	Ea	4828.653	Tb	3	-	-	4823.41	Xe II	-	[150 h]	Hu
4833.68	Kr II	-	[4 h]	Me	4828.574	Nd	10	-	-	4823.370	Ne I	-	[50]	Ps
4833.675	Sc I	6	5	-	4828.562	Er	2	-	-	4823.306	Yt II	15	10	-
4833.513	Nd	2	2	-	4828.467	Mo	25	25	-	4823.297	Er	15	15	-
4833.47	Rh	2	2	Me	4828.450	I II	-	[5]	Mu	4823.184	Th	3	2	-
4833.369	Cb	10	10	-	4828.441	Os	3	-	-	4823.174	Ne I	-	[100]	Ps
4833.329	Sm II	80	-	-	4828.313	U	2	-	-	4823.08	Gd	5	-	Ed
4833.14	Pr	15 w	-	-	4828.28	I II	-	[3]	Mu	4822.980	Pr	125	10 w	-
4833.020	V I	9	8	-	4828.150	I II	-	[2]	Mu	4822.931	Mo	6	5	-
4832.997	Ru	25	1	-	4828.119	Be II	-	[25]	Ps	4822.865	Sm	5	-	-
4832.921	Mo	15	10	-	4828.084	W	6	-	-	4822.568	Ru I	10	-	-
4832.82	Sb II	-	[5]	Lg	4828.07	I	-	[8]	Bl	4822.541	Ce	25	-	-
4832.808	Mo	15	10	-	4828.065	Pr	15	-	-	4822.424	Mo	15	12	-
4832.800	Th	12	3	-	4828.062	Er	3	-	-	4822.3	Hg I	-	[5]	Wd
4832.79	A I	-	[5]	Ms	4828.044	Zr I	10	-	-	4822.158	Tb	2	-	-
4832.742	Th	2	-	-	4827.813	Sm	2	-	-	4822.132	Yt I	8	-	-
4832.734	Pr	3	-	-	4827.740	Nd	2	1	-	4822.119	Er	10	2	-
4832.730	Fe I	5	-	-	4827.587	Ne I	-	[300]	IMe	4822.00	Dy	2	-	Ed
4832.704	Ni I	70	-	-	4827.578	Ti I	15	1	-	4821.949	Pr	15	-	-
4832.427	V I	25	20	-	4827.562	Nd	5	-	-	4821.924	Ta	3	-	-
4832.4	bh C	-	-	L	4827.5	bh Zr	30	-	L	4821.924	Ne I	-	[300]	IMe
4832.388	Dy	7	2 h	-	4827.499	Tb	3	-	-	4821.708	Gd	150	80	-
4832.38	A I	-	[5]	Ms	4827.450	V I	20	15	-	4821.636	Yt I	2	2 h	-
4832.331	Sm	2	-	-	4827.4	bh Zr	8	-	L	4821.298	Dy	4	-	-
4832.31	Ho	3	2	Ex	4827.338	Ne I	-	[1000]	IMe	4821.29	Sb II	-	[2]	Lj
4832.276	Nd	20	-	-	4827.283	Sc I	5	-	-	4821.262	Th	2	2	-
4832.236	Cu II	-	10	Sh	4827.250	Pr	20 d	-	-	4821.153	Pr	4	-	-
4832.2	Hg I	-	[5]	Wd	4827.243	Er	3	-	-	4821.143	Ni I	25	2	-
4832.185	Ta	100	-	-	4827.14	Te	-	[50]	Bl	4821.047	Fe	200 h	200 h	-
4832.076	Ti I	20	1	-	4827.12	Dy	2	2	Ed	4821.038	Tb	2	-	-
4832.075	Sr I	200	8	-	4827.1	Hg I	-	[15]	Wd	4821.03	Dy	2 h	-	Ed
4832.07	Kr II	-	[800]	Me	4826.99	Tm	10	25	Me	4820.897	Th	3	2	-
4832.070	Pr	100 w	-	-	4826.896	Mn	10	5	-	4820.81	Eu	4 W	-	Kn
4832.03	Tb	3	-	Ed	4826.886	La II	15	30	-	4820.766	Sm	8	-	-
4831.956	Pt I	2	1 h	-	4826.819	Th	3	-	-	4820.756	Tb	2	-	-
4831.645	V I	30	25	-	4826.798	Tb	2	-	-	4820.747	Er	3	-	-
4831.627	Cr	25	-	-	4826.77	S II	-	[3]	Hn	4820.612	Ce	8	-	-
4831.603	Th	4	-	-	4826.748	Ir	15	-	-	4820.60	Re	20	-	-
4831.435	Pr	6	-	-	4826.656	Os	18	-	-	4820.59	Ga	-	2	Kl
4831.36	W	5	-	-	4826.649	Pr	40 wh	-	-	4820.577	Pr	4	-	-
4831.29	Te	-	[800]	Bl	4826.575	Sm II	15	-	-	4820.494	Eu	3	2	-
4831.217	Pt I	3	-	-	4826.559	Dy	4	2	-	4820.415	Ti I	125	30	-
4831.21	Tm	50	80	Me	4826.551	Ru	4	-	-	4820.36	Ho	2	1	Ex
4831.183	Ni I	200	2	-	4826.310	Pr	9	-	-	4820.344	Er	25	2	-
4831.163	Er	25	-	-	4826.22	Tb	2	-	Ed	4820.336	Nd	40	-	-
4831.16	N	-	[2 h]	Du	4826.194	Ru	4	-	-	4820.237	Yb	15	60	-
4831.133	Th	10	2	-	4825.97	A I	-	[2]	Ms	4820.080	W	3	-	-
4831.080	Nd	5	-	-	4825.930	U	6	-	-	4820.064	Cr	3	-	-
4830.88	Dy	2	-	Ed	4825.91	Ra I	-	[800]	Rs	4820.032	Ce	12	-	-
4830.84	Tb	2	-	Ed	4825.822	Pr	10	-	-	4819.937	Ne I	-	[70]	Ps

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4819.872	Eu	3	-	-	-	4815.119	Ta	5	15	-	-	4809.368	Cb	5	8	-	-
4819.803	Gd	25	-	-	-	4815.114	Mn	15 h	-	-	-	4809.289	Cr	12	-	-	-
4819.80	Se	-	[25]	-	Bt	4815.10	Ir	2	-	-	Me	4809.289	Eu	10	2	-	-
4819.79	Cl II	-	[25]	-	Ks	4815.05	Lu	20	2	-	Me	4809.18	Hf II	8	10	-	Me
4819.735	Pr	3	-	-	-	4815.045	Zr I	15	-	-	-	4809.05	Cl II	-	[9]	-	Ks
4819.734	Ir	2 h	-	-	-	4814.845	U	2	-	-	-	4809.015	La II	150	150	-	-
4819.643	Nd	10	-	-	-	4814.80	Ge II	-	200	-	Lg	4809.001	Sm	2	-	-	-
4819.642	Yt I	4	4	-	-	4814.73	Tb	3	-	-	Ed	4808.874	U	8	-	-	Hb
4819.60	S II	-	[25]	-	Hn	4814.719	Ru I	4	-	-	-	4808.864	Ni I	25	-	-	-
4819.57	Si	-	8	-	Sy	4814.617	Ni I	5	-	-	-	4808.75	Dy	3	-	-	Ed
4819.56	Eu	2 w	-	-	Kn	4814.521	Eu	2	2	-	-	4808.723	Mn	20	-	-	-
4819.544	U	12	12	-	-	4814.493	Tb	2	-	-	-	4808.621	Eu	1	2	-	-
4819.533	Ta	100	-	-	-	4814.468	Mo	10	8	-	-	4808.60	Tb	2	-	-	Ed
4819.46	Cl II	-	[200]	-	Ks	4814.344	Pr	30	3	-	-	4808.531	Ti I	12	2	-	-
4819.34	P	-	[15]	-	Gu	4814.338	Ne I	-	[50]	-	Ps	4808.51	Yb	-	4 h	-	Me
4819.251	U	2	-	-	-	4814.33	Sm	3	-	-	-	4808.502	Ce	10	-	-	-
4819.249	Mo	80	60	-	-	4814.265	Cr	100	-	-	-	4808.487	Sm	8	-	-	-
4819.19	Tb	2	-	-	Ed	4814.2	P II	-	[30 wh]	-	Gu	4808.459	Mo	10	8	-	-
4819.151	Pd I	2	-	-	-	4814.099	Mo	2	5 h	-	-	4808.29	Eu	5	-	-	Ed
4819.041	Dy	7	2	-	-	4813.983	Co I	100	2	-	-	4808.191	Pr	20	-	-	-
4819.034	V	3	2	-	-	4813.936	V	-	25	-	-	4808.087	Mo	25	25	-	-
4819.032	Ti	40	2	-	-	4813.798	Os	18	-	-	-	4808.02	I I, II	-	[15]	-	Bl
4818.987	Pr	6	-	-	-	4813.768	Gd	15	-	-	-	4808.019	Gd	15	-	-	-
4818.972	Nd	12	-	-	-	4813.767	Tb	25	-	-	-	4807.945	Dy	4	-	-	-
4818.947	W	4	-	-	-	4813.55	Eu	8	-	-	Kn	4807.926	Tb	2	-	-	-
4818.867	Hf	25	4	-	-	4813.484	Co I	1000 W	6	-	-	4807.712	Mo	4	4	-	-
4818.789	Ne I	-	[150]	-	Ps	4813.40	Rh	2	-	-	Me	4807.677	Ce	5	-	-	-
4818.78	U	2	-	-	-	4813.28	Si	-	6	-	Sy	4807.62	Br I	-	[10]	-	Ks
4818.645	Th	5	5	-	-	4813.226	Ru I	6	-	-	-	4807.614	U	3	-	-	-
4818.55	Cl I	-	[4]	-	Ks	4813.179	Tb	2	-	-	-	4807.530	V I	40 h	30 h	-	-
4818.437	U	3	-	-	-	4813.161	Mo	5	5	-	-	4807.53	Ca	2 h	-	-	-
4818.41	Br	-	[5]	-	Bl	4812.940	Cu II	-	15	-	Sh	4807.465	Gd	100	40	-	-
4818.376	Yb	3	20	-	-	4812.906	Ti I	2	-	-	-	4807.419	Pr	3	-	-	-
4818.368	W	4	-	-	-	4812.848	Ru I	4	-	-	-	4807.370	Sm	2	-	-	-
4818.331	Mn	3	-	-	-	4812.84	C I	-	5	-	Fl	4807.366	W	15	1	-	-
4818.325	Pr	3	-	-	-	4812.812	Dy	2	2	-	-	4807.239	Pr	9	-	-	-
4818.231	Dy	2	-	-	-	4812.749	Ta	150	5	-	-	4807.180	Mn	12	-	-	-
4818.2	bh Yt	30	-	-	Me	4812.670	Nd	3	-	-	-	4807.14	Hf II	6	8	-	Me
4818.171	Er	10	-	-	-	4812.637	Kr I	-	[40]	-	IHu	4807.091	Os	6	-	-	-
4818.02	Xe II	-	[100]	-	Hu	4812.620	Os	2	-	-	-	4807.058	Cb	5	5	-	-
4817.847	Ni I	15	-	-	-	4812.6	bh V	2	-	-	L	4807.039	Cu II	-	4	-	Sh
4817.769	Er	2	-	-	-	4812.588	W	4	-	-	-	4807.019	Xe I	-	[500]	-	IMe
4817.699	Mo	25	25	-	-	4812.484	Mo	3	3	-	-	4806.996	Ni I	150 W	1	-	-
4817.694	W	5	1	-	-	4812.37	Cr II	-	4	-	-	4806.94	Eu	2 w	-	-	Kn
4817.636	Ne I	-	[300]	-	IMe	4812.25	Ac	-	60	-	Lx	4806.92	Xe	-	[2 h]	-	Hu
4817.55	La	4	-	-	Me	4812.250	Ti I	18	2	-	-	4806.774	Tb	4	-	-	-
4817.545	Pr	5	-	-	-	4812.203	Ru	5	-	-	-	4806.679	Zr I	4	-	-	-
4817.509	Pd	40	8	-	-	4812.01	As	-	10	-	Ro	4806.624	Nd	12	-	-	-
4817.502	Dy	2	-	-	-	4811.999	Ni I	10	-	-	-	4806.416	W	3 wh	1	-	-
4817.480	Ce	5	-	-	-	4811.881	Sr I	40	-	-	ISn	4806.377	I II	-	[15]	-	Ks
4817.4	bh Yt	20	-	-	Me	4811.76	Kr II	-	[300]	-	Me	4806.37	Pd I	2	-	-	Mo
4817.369	Er	12	-	-	-	4811.735	Pr	7	-	-	-	4806.362	Mo	3	20 h	-	-
4817.341	Ru I	10	-	-	-	4811.699	U	4 h	-	-	-	4806.255	Cr I	80	-	-	-
4817.330	W	2	-	-	-	4811.62	Au I	50	15	-	-	4806.194	Ru	10	-	-	-
4817.33	C I	-	[5]	-	Jn	4811.57	Cl II	-	[12]	-	Ks	4806.07	A	-	[500]	-	Rs
4817.22	Xe II	-	[20 wh]	-	Hu	4811.473	Er	2	-	-	-	4806.065	Th	-	3 h	-	-
4817.21	Hf II	15	40	-	m	4811.343	Nd	60	60	-	-	4805.97	V	-	2 h	-	Me
4817.180	Nd	12	-	-	-	4811.300	Cb	15	2	-	-	4805.96	P II	-	[5 h]	-	Gu
4817.167	La I	10	-	-	-	4811.208	Fe	4	-	-	-	4805.931	Ce	18	-	-	-
4817.15	Rn	-	[100]	-	Re	4811.14	V	-	4	-	Me	4805.870	Zr I	15	-	-	-
4817.07	Rh	2	-	-	Me	4811.14	Hf	6	2	-	Me	4805.833	Pr	4	-	-	-
4817.007	Pd	4	2 h	-	-	4811.080	Ti I	12	1	-	-	4805.824	Gd	200	80	-	-
4816.964	Mo	3	3	-	-	4811.064	Pr	5	-	-	-	4805.77	Dy	2	-	-	Ed
4816.9	bh Pb	6	-	-	L	4811.062	Mo	50	50	-	-	4805.579	Mo	30	30	-	-
4816.845	Gd	50	20	-	-	4810.889	U	6	-	-	-	4805.532	Ce	2	-	-	-
4816.821	W	5	-	-	-	4810.733	Cr	30	-	-	-	4805.426	Ti I	70	4	-	I
4816.71	Br II	-	[300]	-	Bl	4810.634	Ne I	-	[100]	-	Ps	4805.269	Tb	3	-	-	-
4816.620	Er	2	-	-	-	4810.597	Cb	100	10	-	-	4805.196	Eu	1	2	-	-
4816.481	Sm II	8 d	-	-	-	4810.534	Zn I	400 w	300 h	-	IHz	4805.19	K I	4	-	-	Fl
4816.40	Yb	20	1	-	m	4810.51	Kr I	-	[3]	-	Me	4805.103	Nd	6	-	-	-
4816.377	Cb	50	50	-	-	4810.509	Nd	2	2 wh	-	-	4805.102	Ti II	15	125	-	-
4816.142	Cr	30	-	-	-	4810.487	Rh	15	25	-	-	4804.914	Sm II	15	-	-	-
4816.133	Pr	7	-	-	-	4810.392	Ce	6	-	-	-	4804.912	Mo	10	10	-	-
4816.107	W	10	1	-	-	4810.286	N II	-	[5]	-	Fl	4804.884	Ru I	20	-	-	-
4816.027	Sm II	20	-	-	-	4810.241	Dy	2	-	-	-	4804.801	Yt I	5	3	-	-
4815.957	Os	60	-	-	-	4810.203	Tb	3 r	-	-	-	4804.792	Er	15	1	-	-
4815.894	Co I	4	1	-	-	4810.104	Re	4	-	-	-	4804.70	Cr I	35	-	-	-
4815.806	Sm II	125	80	-	-	4810.063	Ne I	-	[150]	-	IMe	4804.61	Ca	-	[10]	-	Bs
4815.702	U	5	-	-	-	4810.06	Cl II	-	[200]	-	Ks	4804.509	Dy	3	2	-	-
4815.672	Pr	7	-	-	-	4809.699	Ru	4	-	-	-	4804.5	Pb II	-	[8]	-	Ea
4815.629	Zr I	40	-	-	-	4809.648	W	2	1	-	-	4804.33	A I	-	[5]	-	Ms
4815.523	Ru I	20	-	-	-	4809.61	Se II	-	[4]	-	Bl	4804.313	Yt I	3	3 h	-	-
4815.515	S II	-	[800]	-	Hn	4809.500	Ne I	-	[10]	-	Ps	4804.241	Pt	2	-	-	-
4815.495	Os	18	-	-	-	4809.468	Zr I	8	-	-	-	4804.218	Er	10	-	-	-
4815.39	Ir	2	-	-	Me	4809.467	Ir	3	-	-	-	4804.086	Eu	8	-	-	-

4804.0—4787.7 A.

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities					
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
4804.041	La II	150	150	-	4798.315	Pr	4 h	-	-	4792.619	Xe I	-	[150]	IHu					
4804.039	Pr	15 w	-	-	4798.24	Br	-	[8]	Bl	4792.60	Au I	200 W	60	-					
4803.963	Th	2	2 w	-	4798.065	Eu	10	1	-	4792.566	Au	20	2	-					
4803.745	Nd	3	-	-	4798.031	Nd	4	-	-	4792.513	Cr	200	40	-					
4803.551	Gd	100	40	-	4797.985	Ti I	18	2	-	4792.488	Ti I	70	12	-					
4803.515	Dy	2	-	-	4797.962	V I	4	3	-	4792.465	La I	3	-	-					
4803.493	Th	3	8 h	-	4797.957	Pr	3	-	-	4792.463	U	2	-	-					
4803.440	Zr I	3	-	-	4797.715	Cr	25	-	-	4792.382	Tb	2	-	-					
4803.407	Sm	3	-	-	4797.700	Mn	25	-	-	4792.22	Sn II	-	-	-					
4803.34	Re	2	-	-	4797.66	Se II	-	[12]	Bt	4792.12	A II	-	-	[20]	Mc				
4803.279	U	2 h	-	-	4797.598	Dy	2	2	-	4792.06	P II	-	-	[70 I]	Gu				
4803.272	N II	-	[30]	Fl	4797.548	W	15	2	-	4792.04	Cl II	-	-	[12]	Ks				
4803.11	Ra	-	[6]	Rs	4797.157	Nd	30	-	-	4792.02	S II	-	-	[40]	Hn				
4803.062	Ce	4	-	-	4797.110	Tb	2	-	-	4791.952	Pr	8	-	-	-				
4803.000	Sm	10	-	-	4797.042	Cu I	12	1 h	Hs	4791.89	Dy	2	-	-	Ed				
4803.00	O I	-	[50]	Ps	4797.041	W	6	-	-	4791.84	Eu	10 W	-	-	Kn				
4802.97	Kr II	-	[4]	Me	4797.011	In II	-	[10]	Ps	4791.835	U	3	-	-	-				
4802.904	Ru	7	-	-	4797.01	Hg	-	[300]	Ps	4791.826	Mo	5	5	-	-				
4802.886	Fe	2	-	-	4796.918	V I	30	25 h	-	4791.81	Br	-	-	[2]	Bl				
4802.81	S	-	[20]	Hn	4796.908	Re	2	-	-	4791.602	Gd	150	-	-	-				
4802.760	Er	2	-	-	4796.889	Cr I	5 h	-	-	4791.597	Pr	3	-	-	-				
4802.675	Pr	4	-	-	4796.861	Nd	6	-	-	4791.584	Sm II	150	-	-	-				
4802.674	Tm	5	-	-	4796.843	Pr	6	-	-	4791.54	Au	-	2	-	-				
4802.65	Br I	-	[25]	Ks	4796.709	Mn	15	-	-	4791.500	Sc I	12	6	-	-				
4802.583	Gd	100	40 h	-	4796.688	La II	12	10	-	4791.478	Rh I	2 h	-	-	Mo				
4802.449	Cb	3	2	-	4796.58	I I	-	[8]	Bl	4791.419	Re	200 w	-	-	-				
4802.389	Tb	4	-	-	4796.58	Rn	-	[5]	Rc	4791.397	La I	6	-	-	-				
4802.363	Ne I	-	[10]	Ps	4796.53	Xe	-	[3 wh]	Hu	4791.299	Dy	8	2	-	-				
4802.34	Br	-	[20]	Bl	4796.522	Mo	40	40	-	4791.266	Pr	6	-	-	-				
4802.25	As	-	10	Ro	4796.519	W	3	-	-	4791.248	Fe I	200	200 R	-	-				
4802.23	Pb	-	10	Sx	4796.424	Pr	4	-	-	4791.158	Eu	3	-	-	-				
4802.20	O I	-	[30]	Ps	4796.371	Co I	100	-	-	4791.15	A I	-	-	[2]	Ms				
4802.08	Dy	3	-	Ed	4796.33	Kr II	-	[60 hl]	Me	4791.15	Kr II	-	-	[3]	Ms				
4802.034	Pr	5	-	-	4796.259	U	2	-	-	4791.10	U	3 s	-	-	-				
4802.022	U	2	-	-	4796.216	Ti I	30	3	-	4791.08	K I	2	-	-	Fl				
4802.01	Sb II	-	[40]	Lg	4796.169	Cr	125	1 h	-	4791.021	Rh	3	3	-	-				
4801.870	Tb	6	2	-	4796.10	Te	-	[70]	Bl	4791.020	Tb	2	-	-	-				
4801.80	O I	-	[15]	Ps	4795.963	Hf	3	2	-	4790.977	Mo	10 R	-	-	Pu				
4801.501	Pr	10	-	-	4795.905	Sm	2	-	-	4790.915	Cb	3	2	-	-				
4801.415	Tm	10	5	-	4795.888	Eu	2	-	-	4790.832	Pd I	3	-	-	-				
4801.357	Ce	2	-	-	4795.852	Co I	100	-	-	4790.86	W	-	12	-	-				
4801.176	Ru	10	-	-	4795.828	Pr	5	-	-	4790.842	Pr	5	-	-	-				
4801.150	Pr	40	3	-	4795.666	Ir	2 wh	2 wh	-	4790.728	Ne I	-	-	[30]	Ps				
4801.077	Gd	200	200	-	4795.62	Ne II	-	[15]	Bn	4790.725	Hf II	20	20	-	-	Bl			
4801.030	Cr	200	70	-	4795.568	Ru I	20	-	-	4790.69	I	-	-	[8]	-				
4801.012	Mo	3	4	-	4795.504	Er	9	1	-	4790.337	Cr I	100	1	-	-				
4800.82	Eu	2 w	-	Kn	4795.40	Xe II	-	[2 h]	Hu	4790.218	Ne	-	-	[50]	IMe				
4800.68	Dy	4	-	Ed	4795.371	Mo	4	3	-	4790.04	Ru I	2	-	-	-				
4800.656	Fe	15	-	-	4795.249	Pr	20	-	-	4790.063	U	4	-	-	-				
4800.499	Hf	50	6	-	4795.247	Ir	2	-	-	4789.961	Cb	5	15	-	-				
4800.439	Tb	3	-	-	4795.23	Br	-	[5]	Bl	4789.960	Sm	50	-	-	-				
4800.258	La I	15	-	-	4795.102	V	5	4	-	4789.918	Tb	8 w	-	-	-				
4800.176	Th	3	2	-	4794.955	Zr I	3	-	-	4789.90	Tm	15	10	-	-				
4800.16	K I	3	-	Fl	4794.903	Pr	7	-	-	4789.803	Cb	-	3 h	-	-				
4800.111	Gd	30	80	-	4794.850	Dy	3	-	-	4789.803	Ti I	4	-	-	-				
4800.111	Ne	-	[15]	IMe	4794.604	Mo	12	10	-	4789.654	Fe I	100	-	-	S				
4800.07	I	-	[8]	Bl	4794.561	La	10	-	-	4789.62	Eu	2 W	-	-	Kn				
4800.01	In	5	9	Sq	4794.54	Cl II	-	[250]	Ks	4789.600	Ne I	-	-	[100]	Ps				
4800.005	La I	15	-	-	4794.48	Ca	-	2	-	4789.428	Nd	40	-	-	-				
4799.919	W	50	10	-	4794.384	Ru I	25	-	-	4789.380	Cr I	300	100	-	-				
4799.918	Cd I	300 w	300 w	Hf	4794.321	Pr	4	-	-	4789.367	Pr	6 h	-	-	-				
4799.869	Gd	25	60	-	4794.307	Sm	9	-	-	4789.343	Mo	8	8	-	-				
4799.802	Ti I	80	15	-	4793.994	Os	300	6	-	4789.279	Ta	4	15 h	-	-				
4799.774	V I	15	12	-	4793.821	Mo	15	15	-	4789.212	Re	10	-	-	-				
4799.68	As II	-	10	Ro	4793.82	Tb	2	-	Ed	4789.109	Zr I	5	-	-	-				
4799.61	Br	-	[8]	Bl	4793.800	Cu	5 wh	2 wh	Mx	4788.926	Ne	-	-	[300]	IMe				
4799.497	Re	3	-	-	4793.656	N II	-	[5]	Fl	4788.868	Ce	4	-	-	-				
4799.45	Xe II	-	[10 hl]	Hu	4793.570	Re	2	-	-	4788.76	Kr II	-	-	[5 h]	Me				
4799.423	Nd	15	-	-	4793.454	Gd	5 h	-	-	4788.753	Fe I	40	-	-	-				
4799.418	Pr	4	-	-	4793.411	Mo	30	30	-	4788.669	Zr I	10	-	-	-				
4799.383	Eu	5	-	-	4793.276	Zr I	3	-	-	4788.513	Tb	3	-	-	-				
4799.303	Yt I	5	3	-	4793.24	Tb	2	-	Ed	4788.45	Dy	2	-	-	Ed				
4799.114	Re	10	-	-	4793.18	Ir	2	-	Me	4788.434	W	15	1	-	-				
4798.925	Eu	5	-	-	4793.058	Cb	3	-	-	4788.425	Ce	10	-	-	-				
4798.875	Sm II	50 r	-	-	4793.004	Mn	8	-	-	4788.339	Nd	3	-	-	-				
4798.753	Pr	25	-	-	4793.0	Rn	-	[10]	Wa	4788.279	Pr	10	-	-	-				
4798.742	A I	-	[30]	Ms	4792.957	V I	4	3	-	4788.25	I	-	-	2 h	Bl				
4798.673	Rh	3	-	-	4792.921	Pr	10 h	-	-	4788.181	Mo	15	15	-	-				
4798.662	Tb	2	-	-	4792.89	Dy	4 h	-	-	4788.175	Pd I	200 h	4 h	-	-				
4798.535	Ti II	2	15	-	4792.863	Co I	600 W	5	-	4788.126	N II	-	-	[25]	Fl				
4798.52	Pb	-	20	Sx	4792.843	Sc	3	2	-	4788.1	Pb II	-	-	[6]	Ea				
4798.443	Ru I	25	-	-	4792.824	W	3	-	-	4787.992	Eu	2	-	-	-				
4798.436	Dy	2	-	-	4792.742	Mo	40	30	-	4787.97	Tm	5	-	-	-				
4798.4	Pb I	-	5	Kl	4792.73	Se I	-	[20]	Rd	4787.940	W	15	1	-	-				
4798.40	Cl II	-	[15]	Ks	4792.623	Nd	2	-	-	4787.77	Xe II	-	-	[50]	Hu				

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4787.752	Cr	12	-	-	-	4782.762	Th	4	3	-	-	4777.881	Mo	5	5	-	-
4787.748	Ir	5	-	-	-	4782.739	Hf	40	5	-	-	4777.85	Se II	-	-	[20]	Bl
4787.735	Cb	3 h	-	-	-	4782.644	Ru	10	-	-	-	4777.840	Sm II	100	-	-	-
4787.626	Mo	10	8	-	-	4782.599	Zr I	3	-	-	-	4777.713	Nd	15 d	-	-	-
4787.624	Eu	2	-	-	-	4782.58	Tb	2	-	-	-	4777.700	Eu	40	-	-	-
4787.573	Pr	5	-	-	-	4782.216	Ce	10	-	-	-	4777.680	U	6	-	-	-
4787.433	Nd	8	-	-	-	4782.100	Pr	3	-	-	-	4777.579	Cr I	10	-	-	-
4787.343	Ru	5	-	-	-	4782.1	Hg I	-	[5]	-	Wd	4777.48	Ho	2	1	-	Ex
4787.29	As II	-	15	-	Ro	4781.95	Ne II	-	[5]	-	Bn	4777.20	Hf	3	3 h	-	Me
4787.229	Pr	3	-	-	-	4781.935	Gd	200	50	-	-	4777.171	Rh	5	2	-	-
4787.20	I II	-	[2]	-	Mu	4781.92	Tb	2	-	-	-	4777.151	Eu	3	-	-	-
4787.206	W	5	-	-	-	4781.88	Yb	50	5	-	-	4777.14	Br	-	[5]	-	Bl
4787.2	bh Sr	2	-	-	L	4781.88	Dy	3	-	-	Ed	4776.89	Dy	2	-	-	m
4787.161	Tb	3	-	-	-	4781.849	Er	3	-	-	-	4776.567	Pd I	5	9	-	-
4786.935	Dy	8	4	-	-	4781.838	Sm II	60	-	-	-	4776.519	V I	4 h	3 h	-	-
4786.89	K I	2	-	-	Fl	4781.82	Cl II	-	[50]	-	Ks	4776.478	Ce	6	-	-	-
4786.877	Yt I	15	15	-	-	4781.760	Ru	12	-	-	-	4776.42	Br	-	-	[200]	Bl
4786.810	Fe I	150	-	-	S	4781.718	Ti I	30	2	-	-	4776.410	Rb II	-	-	[100]	Rr
4786.806	Gd	40	2	-	-	4781.716	Ce	8	-	-	-	4776.363	V I	9	8	-	-
4786.783	Tb	35	-	-	-	4781.566	Sm	8	-	-	-	4776.343	Mo	40	40	-	-
4786.65	Xe II	-	[8 h]	-	Hu	4781.55	Tb	2	-	-	-	4776.317	Co I	300	-	-	-
4786.643	Ta	20	-	-	-	4781.462	Nd	-	-	-	-	4776.234	Ce	6	-	-	-
4786.603	Er	2	2	-	-	4781.433	Co I	400	2 h	-	-	4775.998	Rb II	-	25	-	Rr
4786.598	Yb	50	200	-	-	4781.32	Cl II	-	[75]	-	Ks	4775.996	Pr	9	-	-	-
4786.593	Pr	6	-	-	-	4781.318	Eu	15	-	-	-	4775.96	Sm	2	-	-	-
4786.577	Yt II	15	25	-	-	4781.30	Tm	5	10	-	-	4775.87	C I	-	-	[20]	Jn
4786.541	Ni I	300 W	2	-	-	4781.239	Ne I	-	[2]	-	Ps	4775.804	Dy	7	2	-	-
4786.540	Ce	10	-	-	-	4781.168	N II	-	[5]	-	Fl	4775.76	Xe II	-	-	[10 whl]	Hu
4786.507	V I	30	25 h	-	-	4781.110	Ru	7	-	-	-	4775.740	Er	4	-	-	-
4786.457	Mo	25	25	-	-	4781.06	Gd	25	-	-	Ed	4775.665	Mo	25	25	-	-
4786.457	Nd	2	-	-	-	4781.042	Dy	3	2	-	-	4775.528	Sm II	30	-	-	-
4786.363	Ce II	-	[15]	-	Sv	4781.035	Yt I	10	5	-	-	4775.520	Cr	30 h	-	-	-
4786.293	Ni I	25	-	-	-	4781.019	Er	35	2	-	-	4775.419	Pr	10	-	-	-
4786.240	Dy	2	-	-	-	4780.935	Ta	50	200 I	-	-	4775.215	Er	2	-	-	-
4786.192	Tb	5	-	-	-	4780.884	Ne I	-	[30]	-	Ps	4775.21	Br I	-	-	[25]	Ks
4786.19	A	-	[2]	-	Rt	4780.733	Ce	6	-	-	-	4775.18	Xe II	-	-	[10 whl]	Hu
4786.151	Sm	4	-	-	-	4780.559	La	4	-	-	-	4775.18	Tb	3	-	-	-
4786.112	Nd	10	-	-	-	4780.537	Nd	2	-	-	-	4775.170	Pr	10	-	-	-
4785.961	W	2	-	-	-	4780.518	W	10	1	-	-	4775.152	La I	20	-	-	-
4785.909	U	3	-	-	-	4780.338	Ne I	-	[50]	-	IMe	4775.141	Cr	35	-	-	-
4785.869	Sm	100	-	-	-	4780.31	Br I	-	[125]	-	Ks	4775.077	Ce	10	-	-	-
4785.802	Cb	3	2	-	-	4780.29	Tb	3	-	-	-	4774.893	Hf	6	2	-	-
4785.617	Pr	10 w	-	-	-	4780.289	W	3	-	-	-	4774.804	Dy	5	2	-	-
4785.50	Br II	-	[400]	-	Bl	4780.197	U	3	-	-	-	4774.66	Tb	3	-	-	-
4785.44	Cl II	-	[50]	-	Ks	4780.19	Dy	2	-	-	Ed	4774.557	Cr I	20	-	-	-
4785.42	Lu	100	200	-	Me	4780.18	Yt I	2	1	-	m	4774.537	Pr	8	-	-	-
4785.34	Yb	2	-	-	Me	4780.007	Co I	500 w	500	-	-	4774.46	Kr II	-	-	[2]	Me
4785.315	Dy	3	2	-	-	4780.00	Tb	3	-	-	-	4774.3	Al II	-	-	[2]	Sy
4785.19	Br I	-	[20]	-	Ks	4779.953	Ti II	10	100 h	-	-	4774.255	Th	10	5	-	-
4785.122	Mo	30	30	-	-	4779.939	Cr I	10	-	-	-	4774.222	Mo	20	20	-	-
4785.069	Co I	50	-	-	-	4779.939	Gd	2 h	-	-	-	4774.222	N II	-	-	[5]	Fl
4784.919	Zr I	40	-	-	-	4779.895	La I	6	-	-	-	4774.138	Nd	10	-	-	-
4784.918	Dy	4	2	-	-	4779.743	Er	2	-	-	-	4774.137	Sm II	100	-	-	-
4784.88	U	2	-	-	-	4779.710	N II	-	[15]	-	Fl	4774.096	Mn	50	-	-	-
4784.85	Te	-	[70]	-	Bl	4779.689	Eu	2	-	-	-	4773.997	Ru	15	-	-	-
4784.777	Ce	10	-	-	-	4779.632	U	8	3	-	-	4773.942	Ce	18	-	-	-
4784.76	I	-	[5]	-	Ke	4779.603	Th	2	2	-	-	4773.911	W	30	-	-	Bk
4784.76	Sb	-	2 h	-	Sp	4779.458	Nd	30	-	-	-	4773.85	Br	-	-	[12]	Bl
4784.676	Er	2	-	-	-	4779.44	Dy	2 h	-	-	-	4773.76	O I	-	-	[70]	Ps
4784.641	Gd	100	50	-	-	4779.421	W	4	-	-	-	4773.715	Hf	25	4	-	-
4784.635	Pr	3	-	-	-	4779.4	Sb II	-	8	-	Dv	4773.69	Dy	2	2	-	-
4784.526	Yb	2	-	-	-	4779.347	Sc I	80	40	-	-	4773.524	Pr	10	-	-	-
4784.469	V I	12	10	-	-	4779.223	Sm II	10	-	-	-	4773.440	U	4	-	-	-
4784.427	Sm	6	-	-	-	4779.196	Pr	15	-	-	-	4773.437	Mo	20	20	-	-
4784.414	Mo	5	5	-	-	4779.18	Xe II	-	[50]	-	Hu	4773.429	Er	2	-	-	-
4784.320	Sr I	30	-	-	ISn	4779.150	Mn	20 W	-	-	-	4773.412	Ni I	15	-	-	-
4784.29	B II	-	4	-	En	4779.11	S II	-	[25]	-	Hn	4773.286	Mo	10	10	-	-
4784.278	Cb	3	1	-	-	4778.980	Yb	2	-	-	-	4773.247	Cb	10	10	-	-
4784.269	Ru I	25	-	-	-	4778.93	Cl II	-	[45]	-	Ks	4773.19	Xe II	-	-	[50]	Hu
4784.11	Tb	2	-	-	-	4778.81	Tb	6	-	-	-	4773.151	Ru I	15	-	-	-
4784.03	Sb	-	[70]	-	Lg	4778.80	P	-	[30]	-	Gu	4773.094	Gd	20	-	-	-
4784.016	Eu	12	-	-	-	4778.797	U	2	-	-	-	4773.01	Eu	2 W	-	-	Kn
4783.828	Nd	20	-	-	-	4778.647	Eu	20	-	-	-	4773.01	Kr II	-	-	[40 h]	Me
4783.740	W	5	-	-	-	4778.636	Sm	5	-	-	-	4772.97	Tb	3	-	-	-
4783.63	Tm	5	1	-	-	4778.5	bh Sc	3	-	-	Me	4772.89	O I	-	-	[50]	Ps
4783.565	Gd	20	-	-	-	4778.500	Er	3	-	-	-	4772.884	Nd	10	-	-	-
4783.420	Mn	400	60	-	-	4778.401	Nd	5	-	-	-	4772.817	Fe I	10	4	-	S
4783.354	Pr	125	10 w	-	-	4778.36	Tb	6	-	-	-	4772.813	Cb	3	1	-	-
4783.306	Ti I	2	-	-	-	4778.303	Pr	35	-	-	-	4772.73	Br	-	-	[8]	Bl
4783.287	Ru I	10	-	-	-	4778.296	Th	2	-	-	-	4772.701	U	6	18	-	-
4783.100	Sm	150	-	-	-	4778.263	Ti I	40	6	-	-	4772.66	Eu	5 w	-	-	-
4783.079	Cr	25 h	-	-	-	4778.255	Co I	100	-	-	-	4772.582	V I	3	3	-	-
4782.941	Mo	40	40	-	-	4778.165	Pr	35	-	-	-	4772.542	W	12	-	-	-
4782.871	Rb II	-	25	-	Rr	4778.157	Ir	50	3	-	-	4772.54	O I	-	-	[30]	Ps
4782.838	Pr	3	-	-	-	4778.102	U	6	-	-	-	4772.531	Pr	4	-	-	-

4772.4—4757.5 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4772.474	Sm	2	-	4767.162	Dy	2	-	4762.402	Pr	3	-
4772.320	Pt I	5	-	4767.146	Ru	10	-	4762.39	Ho	2	1 h Ex
4772.312	Zr I	100	-	4767.142	Co I	100	-	4762.383	Eu	3	1
4772.296	Pr	5	-	4767.10	Br	-	[200]	4762.376	Mn	100	40
4772.263	Nd	8	-	4767.050	Sm	2	-	4762.37	Tb	4	-
4772.03	Tb	3	-	4766.91	Sb II	-	[25] Lg	4762.22	Hg II	-	[100] Ps
4771.930	Dy	8	2	4766.906	Pr	35	-	4761.969	Pr	6	-
4771.866	Pr	10	-	4766.894	La I	100	10	4761.873	Pd I	3	2 h
4771.854	Cb	3 h	5 h	4766.812	Cb	5	10	4761.85	Se II	-	[20] Bl
4771.805	Re	5	-	4766.729	Cu II	-	2 Sh	4761.761	Nd	4	-
4771.728	Nd	4	-	4766.656	Eu	2	1	4761.587	Sm II	7	-
4771.72	C I	-	[30] Jn	4766.653	Ru	4	-	4761.526	Mn	60	15
4771.72	Eu	3 w	1 m	4766.634	V I	15	12	4761.521	Ru	5	-
4771.68	Tb	2	-	4766.633	Cr I	80	6	4761.362	U	3	-
4771.672	Mn	8	-	4766.62	C I	-	[10] Jn	4761.34	Dy	2	-
4771.667	Sm II	8	-	4766.599	Th	2	-	4761.278	Mo	3	2
4771.66	Cl II	-	[20] Ks	4766.549	Ir	2 wh	-	4761.242	Cr	25	-
4771.611	Cr I	18	-	4766.521	Cb	5	3	4761.16	Yb	-	5 h Me
4771.563	Rh	2	-	4766.51	Hf	20	4 m	4761.125	Pr	25	-
4771.56	Te	-	[50] Bl	4766.430	Mn	80	30	4761.110	Th	10	12
4771.442	Sc	2	3	4766.334	Ti I	12	2	4761.087	Mo	4	3
4771.30	Tb	5	-	4766.19	Sb	-	2 w Sp	4761.032	W	4	-
4771.3	bh Zr	4	-	4766.140	Sm	40	-	4761.02	Er	5	5 m
4771.108	Co I	500 w	-	4766.065	Er	4	-	4760.98	Pb I	-	6 Ro
4771.099	Ti I	10	1	4766.03	Te	-	[150] Bl	4760.971	Yt I	50	25
4771.09	Cl II	-	[40] Ks	4766.00	Br II	-	[50] Bl	4760.770	Os	5	-
4771.063	Nd	2	-	4765.928	Pr	10	-	4760.751	Gd	40	40
4770.872	Mo	8	8	4765.859	Mn	60	25	4760.724	Sm	10	-
4770.85	Ti II	-	5 MI	4765.78	Hf II	3 h	15 m	4760.6	Ti I	2	-
4770.81	Dy	3	2	4765.75	Ti II	-	[5] El	4760.589	Hf II	5	12
4770.792	Rh	2	15	4765.74	Kr II	-	[1000] Me	4760.457	Nd	2	-
4770.776	Eu	15	-	4765.637	W	2	-	4760.262	Sm	150	-
4770.768	W	6	-	4765.62	Br I	-	[5] Ks	4760.20	Au II	-	4 w
4770.58	Ti II	-	[5] MI	4765.60	Eu	3 w	-	4760.20	Tb	8	-
4770.696	Sm	5	-	4765.57	Dy	2	-	4760.186	Mo	125	125
4770.670	Cr I	35	-	4765.52	Se II	-	[40] Bl	4760.028	Sm	20	-
4770.455	Pr	4	-	4765.36	Sb II	-	[40] Lg	4760.010	Dy	15	4
4770.433	La I	25	5	4765.30	Cl II	-	[10] Ks	4759.911	Pr	6	-
4770.414	Ir	2	-	4765.222	Pr	80 w	5 w	4759.907	Cr I	15	-
4770.34	A I	-	[2] Ms	4765.16	Eu	5	1 Kn	4759.90	Tm	25	1
4770.290	Sm	3	-	4765.134	W	3	-	4759.718	La I	6	-
4770.29	Tb	5 w	-	4765.03	Te	-	[15] Bl	4759.7	Bt II	-	2 MI
4770.192	Nd	20	-	4764.89	A	-	[150] Rt	4759.67	Ho	2	-
4770.191	Sm	40	-	4764.84	P	-	[15] Gu	4759.660	Mo	5	5
4770.181	Yb	2	-	4764.73	Dy	4	-	4759.651	Er	15	2
4770.00	C I	-	[10] Jn	4764.722	Ce	8	-	4759.341	Nd	5	-
4769.896	Pr	4	-	4764.643	Cr I	35	-	4759.276	Ti I	100	8
4769.813	Cr	6 h	-	4764.638	Er	2	-	4759.237	Pr	3	-
4769.769	Ti I	12	2	4764.58	Ti II	-	[2] El	4759.100	Nd	20 s	5
4769.73	Te	-	[30] Bl	4764.535	Ti	-	7	4758.926	Sc I	3	5
4769.630	Dy	4	2	4764.50	Tb	4	-	4758.92	Cs	-	[10] Bs
4769.615	Eu	5	-	4764.446	Pr	12	-	4758.904	Ti I	5	1
4769.593	Pr	5	-	4764.419	Mo	50	50	4758.855	Re	30	-
4769.56	Tb	3	-	4764.397	Ru	12	-	4758.819	Sm II	8	-
4769.4	bh Zr	4	-	4764.35	Th	3	2	4758.78	C	-	[10] Jn
4769.36	Hf	4	-	4764.294	Cr	200	35	4758.746	V I	3	2
4769.315	Nd	5	-	4763.971	Eu	4	2	4758.734	Eu	60 W	2
4769.306	Ir	6	-	4763.950	Ni I	150	1	4758.728	Ne I	-	[150] IMe
4769.303	Ru I	20	-	4763.91	P	-	[15] Gu	4758.708	Gd	35	-
4769.260	U	6	15	4763.902	Ti	7	20	4758.634	Nd	2	-
4769.05	Xe II	-	[100] Hu	4763.865	Nd	20	-	4758.542	Ce	4	-
4768.983	Ta	150 l	5	4763.841	Gd	25	10	4758.505	Nd	4	-
4768.946	Nd	2	-	4763.82	Dy	2	-	4758.502	Mo	40	40
4768.770	Ce	10	-	4763.790	I	-	[25] Ke	4758.46	Tb	5	-
4768.68	Cl II	-	[150] Ks	4763.664	Re	20 W	-	4758.421	Cu II	-	10 Sh
4768.672	A I	-	[150] IMe	4763.65	Se II	-	[800] Bl	4758.272	Gd	25	-
4768.667	U	6	-	4763.624	Nd	10	-	4758.211	W	15	1
4768.59	Rn	-	[100] Wa	4763.616	Cs	-	[25] Sv	4758.148	Th	2	-
4768.5	Ti I	2	-	4763.571	Pr	15	-	4758.120	Cb	2	3
4768.460	Ru	7	-	4763.437	Sm	2	-	4758.118	Ti I	125	60
4768.41	Cs	-	[10] Bs	4763.38	S II	-	[20] Hn	4758.044	Pr	10	1
4768.397	Fe I	3	-	4763.38	I I	-	[80] Mu	4758.033	Ta	20	-
4768.393	Ir	2	-	4763.31	Tm	10	10	4757.963	Ir	20	2 wh
4768.389	Sm	6	-	4763.242	Eu	15 W	-	4757.937	Pr	100 w	5 w
4768.340	Fe	6	-	4763.116	Sc I	5	4 h	4757.87	Cs	-	[10] Bs
4768.293	Eu	2	-	4763.099	Os	18	-	4757.853	Rb II	-	10 Rr
4768.160	I II	-	[20] Ke	4762.912	Eu	60	2	4757.842	Ce	15	-
4768.121	Rh	2	-	4762.903	U	5	1	4757.841	Ru I	125	-
4768.091	Pt I	3	-	4762.776	Zr I	10	-	4757.82	Sb II	-	10
4768.081	Co I	300	10	4762.727	Pr	60	10	4757.781	W	15	1
4767.860	Cr	100	8	4762.643	Er	5	1	4757.591	Cr	35	1
4767.804	Pr	20	-	4762.627	Ni I	150	.1 h	4757.584	Hf	15	4
4767.785	W	12	1	4762.606	Ru	4	-	4757.582	Fe I	3	-
4767.601	U	2	-	4762.43	Kr II	-	[300] Me	4757.549	W	60	10
4767.251	Gd	100	25	4762.41	C I	-	[30] Jn	4757.516	Nd	5	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4757.485	V I	12	10	-	4752.535	Nd	2	-	-	4748.23	A I	-	[5]	Ms
4757.415	Dy	3	-	-	4752.52	Tb	100	80	-	4748.208	Dy	2 h	-	-
4757.353	V I	4	3	-	4752.426	Ni I	150	-	-	4748.181	Pr	3	-	-
4757.326	Cr	25	-	-	4752.416	La I	3	-	-	4748.1	Hg I	-	[5]	Wd
4757.272	Mo	3	3	-	4752.410	Th	20	12	-	4748.072	Re	4 h	-	-
4757.162	La	5	-	-	4752.37	Eu	3 W	-	Kn	4748.016	Na I	15	-	Da
4757.150	Mo	4	4	-	4752.286	Sm II	6	-	-	4747.954	W	-	-	-
4757.119	Pr	10 d	-	-	4752.28	Dy	2	2	Ed	4747.880	Pt I	3	-	-
4757.116	Er	2	-	-	4752.27	Br I	-	[100]	Ks	4747.81	Tb	5	-	-
4757.01	Ho	2	-	Ex	4752.209	W	12	1	-	4747.675	Ti I	25	2	-
4756.992	W	5	-	-	4752.158	Os	30	-	-	4747.587	Pr	3	-	-
4756.981	La I	4	-	-	4752.141	Ru	7	-	-	4747.480	Fe	30	25 h	-
4756.803	U	12	6	-	4752.124	Ni I	30	-	-	4747.412	In II	-	[10]	Ps
4756.725	Co I	100	-	-	4752.108	U	4	-	-	4747.386	U	2	-	-
4756.674	Dy	4	2	-	4752.100	Re	2	-	-	4747.256	Ti I	10	-	-
4756.519	Ni I	250	3	-	4752.084	Cr	100	40	-	4747.143	Ce	30	-	-
4756.506	Ta	150	10	-	4752.02	Kr II	-	[100 hl]	Me	4747.078	Er	3	-	-
4756.459	Ir	20	2	-	4751.907	Zr I	4	-	-	4747.07	Ir	2	-	Me
4756.259	Ni	7	-	Ha	4751.891	Na I	20	-	Da	4746.986	Cb	3	1	-
4756.233	Ru	40	-	-	4751.802	Ne I	-	[30]	Ps	4746.93	Pr	100	25 w	-
4756.13	Tb	3	-	-	4751.782	Yb	3	-	-	4746.9	bh B	25	-	L
4756.13	Pr	50 d	2 h	-	4751.671	Pr	3	-	-	4746.823	A I	-	[80]	Ms
4756.113	Cr	300	100	-	4751.655	U	3	-	-	4746.806	W	4	-	-
4755.978	Pr	50	2	-	4751.61	Tb	3	-	-	4746.732	Hf	5 h	-	-
4755.937	Eu	60 w	-	-	4751.565	V I	10	9	-	4746.70	Yb	-	15 h	Me
4755.886	Mo	8	10	-	4751.526	Er	12	1	-	4746.628	V I	15	12	-
4755.852	Nd	15	-	-	4751.423	Cb	3	5	-	4746.111	Sc I	5	3	-
4755.79	P	-	[30 h]	Gu	4751.409	Ce	5	-	-	4746.107	Co I	100	-	-
4755.729	U	8	15	-	4751.365	Eu	6	-	-	4745.928	Ta	10	1	-
4755.72	Mn	10	5	-	4751.360	W	10	1 h	-	4745.84	Ir	2 wh	-	Me
4755.64	Cl II	-	[50]	Ks	4751.354	Re	2	-	-	4745.806	Fe I	8	1	S
4755.613	Th	4	6 w	-	4751.34	O II	-	[50]	Fl	4745.806	Gd	20	2	-
4755.577	Rh I	4	15	-	4751.318	Pr	5 d	-	-	4745.806	Dy	4	3	-
4755.517	Gd	8	20	-	4751.111	Mo	6	4	-	4745.675	Sm II	250	-	-
4755.495	Sr I	12 h	-	ISn	4751.008	Ru	10	-	-	4745.574	W	25	1 wh	-
4755.47	Tb	2	-	-	4751.004	Re	2 h	-	-	4745.380	Nd	3	-	-
4755.373	Sm II	100	-	-	4750.984	V I	15	12	-	4745.308	Cr I	80	2	-
4755.355	Pr	5	-	-	4750.837	Ce	8	-	-	4745.283	Er	2	-	-
4755.329	Rb II	-	[10]	Rr	4750.75	Tm	15	20	-	4745.16	Tb	3	-	-
4755.327	Mo	3	4	-	4750.725	Sm	60	-	-	4745.110	Rh I	20	10	-
4755.318	Cb	5	3	-	4750.686	Ne I	-	[30]	Ps	4745.028	Cb	3	2	-
4755.155	Os	10	1	-	4750.668	U	2 h	-	-	4744.925	Pr	100	10 w	-
4755.137	Cr I	70	-	-	4750.556	Pr	4	-	-	4744.92	K II	-	[15]	Bn
4755.129	W	4	-	-	4750.414	La I	40	40	-	4744.903	Nd	3	-	-
4755.12	S II	-	[30]	Hn	4750.393	Mo	30	30	-	4744.9	bh Yt	6	-	Me
4755.01	Dy	5	3	-	4750.26	N	-	[5]	Du	4744.90	C II	-	5	En
4754.966	Cb	5 h	2	-	4750.236	Tm	3	-	-	4744.818	Ce	10	-	-
4754.934	Mo	2	4	-	4750.227	Ce	6	-	-	4744.72	Cd II	-	4	Vs
4754.768	Ni I	100	-	-	4750.08	Eu	2 w	-	Kn	4744.644	Ru	4	-	-
4754.743	Cr	80	-	-	4750.020	Nd	4	-	-	4744.623	Cb	10	8 h	-
4754.659	Er	2 w	-	-	4750.01	Yb	-	4 h	Mo	4744.5	bh Yt	5	-	Me
4754.635	Pr	15	-	-	4749.924	U	4	-	-	4744.33	Br	-	[5]	Bl
4754.58	Tm	5	-	-	4749.92	Br	-	[4]	Bl	4744.305	U	6	1	-
4754.456	Pr	8	-	-	4749.91	Tb	2	-	-	4744.164	Pr	80	-	-
4754.440	Ne I	-	[100]	Ps	4749.893	W	3	-	-	4744.04	N	-	[10]	Du
4754.36	Co I	200	2	-	4749.809	Ru I	2	-	-	4744.0	bh B	25	-	L
4754.042	Mn	400	60	-	4749.750	Nd	40	-	-	4743.994	Ru	4	-	-
4754.038	Cr	12	-	-	4749.738	Bi II	-	[20]	-	4743.895	U	-	4	-
4753.934	V I	30	25	-	4749.733	Pr	10	-	-	4743.890	Os	60	-	-
4753.904	Pr	8	-	-	4749.706	W	7	1	-	4743.847	Mn	2	-	-
4753.825	Ru	6	-	-	4749.705	Cb	100	50	-	4743.838	Cb	3	-	-
4753.716	Eu	3	1	-	4749.683	Co I	500	100 h	-	4743.814	Sc I	100	60 h	-
4753.71	Sm	2	-	-	4749.64	Sm	6	-	-	4743.700	Th	3	2	-
4753.497	U	2	-	-	4749.634	Eu	6	-	-	4743.655	Gd	300	300	-
4753.481	Cb	3 h	-	-	4749.572	Ne I	-	[300]	IMe	4743.614	Mo	3	3	-
4753.393	W	10	-	-	4749.556	Nd	6	-	-	4743.60	Dy	2 h	-	Ed
4753.345	Mo	6	5	-	4749.45	Dy	2	-	Ed	4743.565	Pr	6	-	-
4753.18	Tb	2	-	-	4749.387	Zr I	3	-	-	4743.52	Re	4	-	Me
4753.156	U	2	-	-	4749.27	Rn I	-	[25]	Rs	4743.516	U	10	-	-
4753.152	Sc I	80	40	-	4749.204	Th	2	-	-	4743.31	Tb	3	-	-
4753.138	La	5 h	-	-	4749.150	Gd	15	-	-	4743.256	Ce	10	-	-
4753.13	N	-	[5]	Du	4749.132	Cs II	3	[10]	Ot	4743.112	Cr	40	-	-
4753.054	Zr I	4	-	-	4749.033	Nd	3	-	-	4743.104	Er	2	-	-
4752.94	Sm	5	-	-	4749.029	Re	25 w	-	-	4743.085	Mo	10	10	-
4752.938	A I	-	[150]	IMe	4749.02	Ho	2	1 h	Ex	4743.085	La II	300 r	300	-
4752.92	Yb	8	20 h	-	4748.981	Sc I	3	3	-	4743.076	Pr	5	-	-
4752.897	Cr	8	-	-	4748.865	Mo	4	5	-	4743.03	Dy	3	2	-
4752.848	Pr	8	-	-	4748.795	Sm	10	-	-	4743.024	Ru	12	-	-
4752.787	Yt I	8	10	-	4748.729	La II	100	200	-	4742.939	Zr I	3	-	-
4752.772	Er	20	2	-	4748.709	Zr I	3 wh	-	-	4742.90	N	-	[4]	Du
4752.731	Ne I	-	[1000]	IMe	4748.67	Cl II	-	[20]	Ks	4742.788	Ti I	100	40	-
4752.70	O II	-	[15]	Fl	4748.603	Pr	4	-	-	4742.70	Tb	2	-	-
4752.67	I	-	[15]	Bl	4748.520	V I	20	15	-	4742.70	Br	-	[200]	Bl
4752.583	W	12	1	-	4748.38	Lu	-	10 hl	Me	4742.630	V I	20	15	-
4752.577	Ce	10	-	-	4748.379	Re	50 w	-	-	4742.626	Os	2	-	-

4742.5—4728.6 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4742.589	Mo	-	10	-	-	4737.642	Sc I	100	60 h	-	-	4732.680	Th	2	2	-	-
4742.549	Er	3 w	-	-	-	4737.626	U	2	-	-	-	4732.612	Gd	300	300	-	-
4742.5	bh Sc	5	-	-	Me	4737.561	Pt I	4	2	-	-	4732.53	Ne II	-	-	[5]	Bn
4742.481	Sm	3	-	-	-	4737.350	Cr	200	80	-	-	4732.51	Xe II	-	-	[10 hl]	Hu
4742.392	Nd	4	-	-	-	4737.282	Ce	20	-	-	-	4732.465	Ni I	100	-	-	-
4742.333	U	10	3	-	-	4737.1	bh C	-	-	-	L	4732.434	Sm	3	-	-	-
4742.325	Pr	7	-	-	-	4737.05	Ti II	-	-	[40]	El	4732.36	Yt I	2	2	-	m
4742.266	Th	4 l	2	-	-	4736.965	Zr	3	-	-	-	4732.329	Zr I	25	-	-	-
4742.25	Se I	-	[500]	-	Rd	4736.958	Sm	4 w	-	-	-	4732.3	Ne	-	-	[15]	Bl
4742.227	Sm	2	-	-	-	4736.945	Er	3	-	-	-	4732.295	Sc I	10	6	-	-
4742.110	Ti I	15	1	-	-	4736.9	bh Zr	60	-	-	L	4732.242	Er	3	-	-	-
4742.04	Ho	10	3	-	Ex	4736.79	Dy	2	-	-	-	4732.191	Pr	3 w	-	-	-
4741.997	Er	3 w	-	-	-	4736.782	Ca	5	2 hl	-	-	4732.08	A II	-	-	[5]	Rt
4741.937	Ge II	-	50	-	-	4736.780	Fe I	125	50	-	-	4732.056	Co I	40	-	-	-
4741.922	Sr I	30	-	-	ISn	4736.688	Pr	125	1	-	-	4732.022	Yb	1	15	-	-
4741.78	Cd II	-	3	-	Vs	4736.637	Mo	10	10	-	-	4731.855	Ir	8	5	-	-
4741.775	Eu	10 W	-	-	-	4736.608	Eur	60	-	-	-	4731.851	Dy	30	10	-	-
4741.726	Sm II	80	-	-	-	4736.6	Rb	-	-	[12]	Dr	4731.85	Tb	4	-	-	-
4741.71	O II	-	[20]	-	Fl	4736.491	Cb	3	5	-	-	4731.818	Eu	4 w	-	-	-
4741.539	Dy	3	2	-	-	4736.490	Sm	10	-	-	-	4731.809	Ni I	100	2	-	-
4741.533	Fe I	12	1	-	S	4736.30	Tb	3	-	-	-	4731.783	Nd	40	-	-	-
4741.520	W	12	2	-	-	4736.203	Nd	10	-	-	-	4731.599	U	40	50	-	-
4741.503	Pr	30	-	-	-	4736.151	Cr	6	-	-	-	4731.586	Er	8	1	-	-
4741.404	Yt I	2	3	-	-	4736.116	Sm	4	-	-	-	4731.492	Fe II	5	1	-	-
4741.398	Er	20	-	-	-	4736.089	Pt	2	-	-	-	4731.443	Mo	100	100	-	-
4741.282	U	1	2	-	-	4736.062	W	3	-	-	-	4731.366	Hf II	15	20	-	-
4741.269	Ru	4	-	-	-	4735.94	Ca	-	2	-	Ad	4731.355	Sm	5	-	-	-
4741.10	Tm	3	-	-	Me	4735.93	A	-	[400]	-	Rt	4731.334	Ru I	60	-	-	-
4741.018	Sc I	100	60 h	-	-	4735.848	Fe	10	1	-	-	4731.3	Rb	-	-	[8]	Dr
4741.005	Pr	6	-	-	-	4735.847	Eu	3	1	-	-	4731.27	Te	-	-	[70]	Bl
4740.97	Se II	-	[600]	-	Bl	4735.77	Hf II	2	10	-	-	4731.247	V I	3	3	-	-
4740.928	Dy	3	2	-	-	4735.763	Gd	150	150	-	-	4731.19	Xe II	-	-	[50 hl]	Hu
4740.68	Cl I	-	[10]	-	Ks	4735.668	Hf II	10	20	-	-	4731.18	Rh	2	-	-	-
4740.614	Cb	3	3	-	-	4735.49	Dy	2	-	-	Ed	4731.173	Ti I	50	6	-	-
4740.524	Eu	500	2	-	-	4735.42	Br II	-	-	[20]	Ks	4731.15	S	-	-	[15]	Ms
4740.517	Th	20	15	-	-	4735.386	Sb II	-	25	-	-	4731.138	Zr I	5	-	-	-
4740.5	bh Zr	8	-	-	L	4735.334	Cb	3 h	5	-	-	4731.100	Th	4 l	-	-	-
4740.40	Cl II	-	[150]	-	Ks	4735.297	Mo	6	8	-	-	4730.998	U	6	4	-	-
4740.359	Mo	5	5	-	-	4735.16	Tb	2	-	-	-	4730.98	I II	-	-	[10]	Mu
4740.331	Ru	7	-	-	-	4735.079	Sc	10	8	-	-	4730.956	Sm	2	-	-	-
4740.285	U	3	10	-	-	4734.908	Nd	8	-	-	-	4730.92	As II	-	-	125	Ro
4740.277	La II	150	300	-	-	4734.833	Co I	150	-	-	-	4730.80	Tb	2	-	-	-
4740.264	Ir	2 wh	-	-	-	4734.791	Nd	4	-	-	-	4730.800	Er	2	-	-	-
4740.165	Ni I	15	-	-	-	4734.75	C II	-	10 h	-	En	4730.78	Se I	-	-	[1000]	Rd
4740.163	Ta	100 R	100	-	-	4734.697	Ce	8	-	-	-	4730.771	La II	2	2 h	-	-
4740.07	Ra	-	[4]	-	Rs	4734.678	Ti I	10	1	-	-	4730.741	Eu	4 W	-	-	-
4739.962	Eu	2	2	-	-	4734.52	Yt	2	10 h	-	-	4730.711	Cr	100	50	-	-
4739.93	Tb	8	-	-	-	4734.441	Gd	100	40	-	-	4730.707	W	5	-	-	-
4739.908	Gd	10 h	-	-	-	4734.410	Os	3	-	-	-	4730.686	Pr	60	1	-	-
4739.888	Nd	3	-	-	-	4734.39	Dy	2	-	-	-	4730.685	U	5	-	-	-
4739.886	Pr	4	-	-	-	4734.37	F II	-	-	[3]	Di	4730.66	A I, II	-	-	[5]	Ms
4739.812	Hf	12	-	-	-	4734.361	Zr I	3	-	-	-	4730.52	Tb	3	-	-	-
4739.792	La II	4	8	-	-	4734.27	P	-	-	[15 h]	Gu	4730.479	Rb II	-	-	10	Rr
4739.758	Pt I	5	-	-	-	4734.21	Tb	15	-	-	-	4730.385	V I	9	8	-	-
4739.665	Cs II	-	[20]	-	Ot	4734.199	Eu	3 W	-	-	-	4730.38	I	-	-	[25]	Ke
4739.59	Mg II	5	-	-	Fl	4734.177	Pr	100 w	8 w	-	-	4730.361	Mn	15	5	-	-
4739.561	Sm	10	-	-	-	4734.152	Xe I	-	-	[600]	I	4730.314	Cb	5	5 h	-	-
4739.534	Ce	10	-	-	-	4734.120	Mo	6	8	-	-	4730.3	Bi II	-	-	[25]	MI
4739.49	P II	-	[30 l]	-	Gu	4734.094	Sc I	100	60 h	-	-	4730.16	Mg I	2	-	-	Fl
4739.478	Zr I	100	-	-	-	4734.032	Er	2	-	-	-	4730.135	Gd	30	-	-	-
4739.440	Ta	2	-	-	-	4734.0	Sb II	-	3	-	Dv	4730.116	Ta	100	5	-	-
4739.42	Cl II	-	[10]	-	Ks	4733.945	Ce	10	-	-	-	4729.883	Th	6	5	-	-
4739.325	Pr	3	-	-	-	4733.917	Nd	6	-	-	-	4729.83	Te	-	-	[50]	Bl
4739.223	Rh I	15	3	-	-	4733.887	Cb	30	30	-	-	4729.82	Bi	-	-	2 h	-
4739.193	U	8	-	-	-	4733.884	Sm	3	-	-	-	4729.723	Sm	2	-	-	-
4739.19	Tb	2	-	-	-	4733.873	Re	10	-	-	-	4729.723	Cr	30	6	-	-
4739.17	Eu	80	-	-	m	4733.806	La I	8	-	-	-	4729.699	Fe I	25	25	-	-
4739.108	Mn	150	15	-	-	4733.776	Bi	2 l	-	-	Om	4729.652	W	30	15	-	-
4739.03	Se I	-	[800]	-	Rd	4733.751	Pr	8	-	-	-	4729.532	V I	15	12	-	-
4739.00	Kr II	-	[3000]	-	Me	4733.74	Hf II	-	2	-	Me	4729.466	Sr I	4 h	-	-	ISn
4738.67	Te	-	[50]	-	Bl	4733.67	Te	-	-	[15]	Bl	4729.45	S II	-	-	[8]	Hn
4738.622	Pr	8 d	-	-	-	4733.596	Fe I	15	1	-	S	4729.291	Ni I	10	-	-	-
4738.575	Hf	20	3	-	-	4733.57	Se II	-	-	[8]	Bl	4729.226	Sc I	100	50 h	-	-
4738.50	Dy	2	2	-	Ed	4733.521	Ru I	40	-	-	-	4729.141	Mo	30	30	-	-
4738.440	U	3	-	-	-	4733.50	Lu	-	3 h	-	Me	4729.130	Pr	4	-	-	-
4738.41	Cl II	-	[10]	-	Ks	4733.484	Cb	8	5	-	-	4729.114	Th	3 w	-	-	-
4738.403	Ru	10	-	-	-	4733.429	Ti I	25	3	-	-	4729.056	Co	2	-	-	m
4738.351	Os	20	-	-	-	4733.395	Mo	3	5	-	-	4729.030	U	1	2	-	-
4738.347	Ta	5	2	-	-	4733.337	Er	7	-	-	-	4729.028	Er	8	-	-	-
4738.29	Mn	12	5	-	-	4733.32	Tm	80	5	-	-	4728.876	Dy	3	-	-	-
4738.160	W	8	-	-	-	4733.3	bh C	-	-	-	L	4728.861	Ir	150	3	-	-
4738.131	Gd	50	50 h	-	-	4733.06	Cs	-	-	[20]	Ba	4728.773	W	7	-	-	-
4738.13	Hf	4	-	-	Me	4732.975	Cs II	-	-	[20]	Sv	4728.769	Sc I	50	25	-	-
4738.040	Os	12	-	-	-	4732.800	Os	15	-	-	-	4728.652	V I	3 h	2 h	-	-
4737.768	Co	150	1	-	-	4732.77	Tb	3	-	-	-	4728.630	Pr	40 w	6 w	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4728.560	Fe I	20	1	-	4723.921	Dy	3	-	-	4719.646	Pr	4	-	-
4728.530	Yt I	60	4	-	4723.913	Eu	20	-	-	4719.515	Ti II	-	2	-
4728.474	Gd	150	100	-	4723.900	Zr I	3	-	-	4719.405	Rh I	2h	-	-
4728.438	Sm	150	-	-	4723.899	Pr	4	-	-	4719.37	Ne II	-	[10]	Bn
4728.417	La II	400 r	300	-	4723.810	Ne I	-	[20]	Ps	4719.347	Sc I	12	5	-
4728.36	Dy	2	2	-	4723.795	Th	12	10	-	4719.318	Ir	2	-	-
4728.24	Br	-	[12]	Bl	4723.795	Cb	5	-	-	4719.31	Er	4	-	Ed
4728.235	Mo	2	3	-	4723.735	Gd	100	200	-	4719.304	Pr	8d	-	-
4728.18	Cs	-	[10]	Bs	4723.716	La I	6	-	-	4719.26	Tm	10	-	-
4728.18	Tb	4	-	-	4723.686	Sm II	20	-	-	4719.22	A I	-	[2]	Ms
4728.148	Eu	40	-	-	4723.452	Th	5	4	-	4719.116	Zr I	8	-	-
4728.023	Ir	4	-	-	4723.449	Mo	4	4	-	4719.102	Hf II	30	40	-
4727.940	Co I	300	-	-	4723.315	Mo	4	4	-	4719.08	U	3h	-	-
4727.916	Nd	5	-	-	4723.245	Er	3l	-	-	4719.054	Gd	50	20	-
4727.851	Ni I	5	-	-	4723.222	Ru	6	-	-	4719.032	Nd	50	-	-
4727.676	U	4	1	Hb	4723.168	Ti I	40	7	-	4718.989	Os	6	-	-
4727.619	Re	40	-	-	4723.167	Dy	2	2	-	4718.98	Tb	3	-	-
4727.590	Ru	6	-	-	4723.149	Cb	1	3h	-	4718.910	Ru	7	-	-
4727.588	Ce	5	-	-	4723.102	Cr	125	8	-	4718.901	W	2	7	-
4727.48	A	-	[5]	Ms	4723.089	W	4	-	-	4718.879	Mo	25h	25h	-
4727.476	Mn	150	20	-	4723.063	Mo	10	20	-	4718.715	Er	2	-	-
4727.47	Eu	8 W	-	Kn	4722.947	Sm	3h	-	-	4718.680	Pr	8d	-	-
4727.46	P	-	[100]	Gu	4722.877	Ta	200	-	-	4718.667	Sm	25	-	-
4727.407	Fe I	10	-	-	4722.865	V I	20	15	-	4718.66	Yb	6 W	-	-
4727.336	U	2	-	-	4722.831	Bi I	10	5	Om	4718.630	W	12	2	-
4727.328	Cb	3	5	-	4722.8	Hg I	-	[5]	Wd	4718.627	Th	8l	5	-
4727.21	C II	-	5h	En	4722.726	U	40	50	-	4718.614	Eu	60 W	2	-
4727.2	Rb	-	[5]	Dr	4722.714	Ne I	-	[15]	Ps	4718.58	Se II	-	[4]	Bt
4727.153	Cr	80	20	-	4722.703	Er	12	-	-	4718.478	Co I	50	-	-
4727.133	Dy	10	8	-	4722.670	Pr	5	-	-	4718.43	N II	-	[5]	Fl
4727.111	Sm	3	-	-	4722.632	Sm	3h	-	-	4718.429	Cr I	200	150	-
4727.11	U	4	4	-	4722.616	Ti I	80	8	-	4718.42	U	2	-	-
4726.91	A	-	[200]	Rs	4722.552	Bi I	1000	100	-	4718.346	Sm II	100	-	-
4726.91	Te	-	[15]	Bl	4722.278	Sr I	30	-	ISn	4718.10	A I	-	[2]	Ms
4726.860	U	1	2	-	4722.190	Bi I	10	5	Om	4718.065	Ru	7	-	-
4726.783	Cb	2h	3	-	4722.16	Kr	-	[3]	Me	4718.024	Cb	2	2h	Me
4726.741	Gd	40	100	-	4722.159	Zn I	400 w	300 h	IHz	4717.924	Mo	50	50	-
4726.556	Nd	15	-	-	4722.150	Ne I	-	[5]	Ps	4717.829	U	3	1	-
4726.55	I II	-	[5]	Mu	4722.14	La II	-	2h	Me	4717.736	Sm II	100	-	-
4726.52	Tb	5	-	-	4722.109	Th	2	-	-	4717.69	Tm	2	1	Me
4726.518	Pr	10	-	-	4722.020	Er	4	-	-	4717.690	V I	20	15	-
4726.495	Sm	10	-	-	4721.910	Pr	3	-	-	4717.688	Cr	20	1	-
4726.477	Th	3	1	-	4721.88	Ir	2	-	Me	4717.620	Zr I	6	-	-
4726.450	Ba I	80	30	-	4721.76	Rn I	-	[150]	Rs	4717.608	Ne I	-	[70]	Ps
4726.371	Dy	3	2	-	4721.711	Hf	10	4	-	4717.586	La II	15	25	-
4726.355	Pr	4 w	-	-	4721.675	Pr	3	-	-	4717.52	Cb	1	3	Me
4726.280	W	6	-	-	4721.62	A	-	[10]	Rt	4717.52	Ho	2	1h	Ex
4726.20	Lu	4	-	Me	4721.536	Ne I	-	[70]	Ps	4717.432	Sm	5	-	-
4726.076	Er	12	5	-	4721.510	V I	15	12	-	4717.39	Br	-	[8]	Bl
4726.075	Yb	45	200	-	4721.471	Pr	2	-	-	4717.29	Gd	10	-	Ed
4726.026	Sm II	100	-	-	4721.466	Gd	20	20h	-	4717.225	Eu	60 W	2	-
4725.937	Re	20	-	-	4721.43	Cl II	-	[25]	Ks	4717.088	Sm	80	-	-
4725.846	Yt I	4h	-	-	4721.408	Co	8	100h	-	4717.081	Nd	40	-	-
4725.703	Eu	8	2	-	4721.396	Sm II	20	-	-	4717.076	Pr	3	-	-
4725.602	W	4	-	-	4721.322	U	-	2h	-	4717.031	Sc I	8	4	-
4725.597	U	1	2	-	4721.284	Os	12	-	-	4717.02	Tb	3	-	-
4725.56	Tm	10	2	-	4721.28	Cl I	-	[6]	Ks	4717.00	P II	-	[15h]	Gu
4725.339	Mo	8	8	-	4721.246	V I	3	2	-	4716.9	bh Zr	4	-	L
4725.145	Ne I	-	[70]	IMo	4721.234	Dy	12	5	-	4716.865	W	10	2	-
4725.135	W	40	3	-	4721.065	Er	5	-	-	4716.81	Te	-	[30]	Bl
4725.090	Ce	10	-	-	4721.00	Xe	-	[2 whl]	Hu	4716.71	Si	-	8	Sy
4725.02	Re	4 w	-	Me	4721.000	Rh I	8	5	-	4716.70	Lu	5	-	Me
4724.936	Eu	4 w	-	-	4720.93	Ir	2 wh	-	Me	4716.693	Sm	2	-	-
4724.93	Tb	2	-	-	4720.925	Ru	15	-	-	4716.674	Mo	5	8	-
4724.89	Kr I	-	[20]	Me	4720.910	Nd	4	-	-	4716.586	Gd	15	15	-
4724.845	Ce	10	-	-	4720.830	Sc I	4	5	-	4716.443	La II	100	200	-
4724.795	Ru I	10	-	-	4720.779	Yb	7	1	-	4716.341	U	-	2	-
4724.787	Th	6	4	-	4720.591	U	-	2h	-	4716.26	Ca	-	4	Ad
4724.765	Pr	4	-	-	4720.550	Eu	10 W	-	-	4716.26	Eu	3 W	-	-
4724.734	Ba	5	3	-	4720.398	W	15	3	-	4716.248	Sc I	6	3	-
4724.679	Ti I	7	-	-	4720.38	As II	-	3	Ro	4716.226	S II	-	[600]	Hn
4724.517	Er	8	2	-	4720.37	Br	-	[10]	Bl	4716.19	Cs	-	[10]	Bs
4724.438	Pr	2	-	-	4720.26	P II	-	[30]	Gu	4716.108	Sm	150	-	-
4724.426	La II	15	20	-	4720.25	Ca	-	2	Ad	4716.06	Tb	15 w	-	-
4724.416	Cr	125	10	-	4720.235	Pr	4	-	-	4716.045	Ru I	10	-	-
4724.358	Nd	30	2	-	4720.223	Eu	8 W	-	-	4716.002	Th	4h	2h	-
4724.342	Rh I	2	2h	-	4720.129	Sm II	20	-	-	4715.951	Er	3	-	-
4724.315	Ce	8	-	-	4720.015	U	5	10	-	4715.893	V I	10	9	-
4724.25	Tm	35	2	-	4719.997	Th	4	4	-	4715.826	Cb	3	50h	-
4724.25	P	-	[75]	Gu	4719.947	La II	200 r	300	-	4715.778	Ni I	200	2	-
4724.223	Dy	3	-	-	4719.94	A I	-	[20]	Ms	4715.669	U	10	5	-
4724.162	Ne I	-	[5]	Ps	4719.842	Sm II	125	-	-	4715.612	Ru	4	-	-
4724.10	A	-	[5]	Ms	4719.77	Br	-	[80]	Bl	4715.589	Nd	30	1	-
4724.057	Eu	30	-	-	4719.766	Er	2	-	-	4715.588	Pr	6	-	-
4724.001	Pd I	15	2h	-	4719.735	Ce	6	-	-	4715.51	Gd	8	-	-

4715.4—4702.6 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4715.436	Th	3	2	4710.651	Sm II	50	-	4706.542	Nd	50	5
4715.432	V	4	3	4710.558	V I	25	20	4706.53	Te	-	[70]
4715.344	Ne I	-	[1500]	4710.478	Ne I	-	[30]	4706.461	Ce	2 h	-
4715.298	Ti I	40	2	4710.341	W	12	3	4706.446	Th	3	-
4715.272	Sm II	100	-	4710.286	Fe I	20	2	4706.404	U	3	4
4715.246	Ne I	-	[30]	4710.223	Ce	2	-	4706.31	Kr II	-	[3]
4715.230	Pr	4	-	4710.200	Tm	4	-	4706.3	bh Yt	4	-
4715.2	bh C	-	-	4710.194	Ti I	100	25	4706.27	Tb	3	-
4715.18	Xe II	-	[80]	4710.189	U	4	6	4706.228	Pr	6	-
4715.132	Ne I	-	[30]	4710.075	Zr I	60	-	4706.219	Th	5	4
4715.072	Ce	6	-	4710.058	Ne I, II	-	[1000]	4706.200	Mo	4	4
4714.995	Er	4	1	4710.018	Os	2	-	4706.170	W	15	1
4714.99	Hf II	3	4	4710.004	Ce	4	-	4706.164	V I	15	12
4714.89	Tb	2	-	4710.00	O II	-	[60]	4706.138	Cb	50	50
4714.852	Pr	4	-	4709.970	Mo	4	5	4706.102	Cr	30	1
4714.630	Sm II	50	-	4709.84	Ho	3	2	4706.091	Ta	200	2
4714.595	U	4	-	4709.82	Eu	30 W	2	4706.057	Mo	25	25
4714.516	W	7	-	4709.80	I	-	[8 h]	4705.98	Eu	4 W	-
4714.510	Mo	15	15	4709.783	Gd	100	25	4705.936	Os	15	1
4714.421	Ni I	1000	8	4709.78	Er	3	1	4705.808	Er	6 d	-
4714.336	Ne I	-	[70]	4709.73	Tb	2	-	4705.767	Gd	25	-
4714.331	Sc I	7	5	4709.718	V I	10	9	4705.764	Th	10	6
4714.228	Nd	4	-	4709.715	Mn	150	15	4705.73	Dy	3 h	-
4714.209	Ru	5	-	4709.714	Nd	30	1	4705.579	Ce	3 h	-
4714.20	Tm	10	15	4709.556	Nd	2	-	4705.573	Pr	5 h	-
4714.152	La I	5	2	4709.519	Pr	40	1	4705.50	Ni I	2	-
4714.146	Pr	30	-	4709.50	A I	-	[30]	4705.48	Tb	20	-
4714.118	V I	25	20	4709.484	Ru I	150	80	4705.464	Fe	2	-
4714.074	Fe	50	50	4709.45	N II	-	[2]	4705.443	Tm	3	-
4713.996	Ce	10	3	4709.336	Sc I	15	15 hl	4705.44	Kr II	-	[2 hl]
4713.993	Cr	15	1	4709.226	Dy	4	2	4705.35	Bi II	-	50
4713.959	Sr I	3	-	4709.098	Fe I	20	2	4705.32	O II	-	[300]
4713.943	U	4	5	4709.08	A I	-	[10]	4705.305	Er	4	-
4713.861	W	6	-	4708.976	Ti I	2	-	4705.159	Ru I	5	-
4713.769	Er	4	-	4708.960	Fe	50	50	4705.087	V I	15	12
4713.69	Tm	10	-	4708.94	Ba II	-	[80]	4705.034	Re	40 w	-
4713.606	Eu	400	2	4708.92	Xe II	-	[8 h]	4705.000	Sm II	3	-
4713.500	Cb	15	15	4708.879	Ir	15	-	4704.963	Fe	10	1
4713.48	Hf II	6	2	4708.86	Yt I	3	1	4704.90	Tb	2 h	-
4713.448	V I	5 h	4 h	4708.854	Ne I	-	[1200]	4704.870	Yb	4	-
4713.433	Zr I	5	-	4708.84	Hf	2	4	4704.86	Br II	-	[250]
4713.373	He I	-	[7]	4708.81	Ca	-	5 d	4704.67	Xe II	-	[8 whl]
4713.32	Tm	10	-	4708.663	Ti	2	20	4704.63	Hg II	-	[200]
4713.143	He I	-	[40]	4708.663	Ti II	2	20	4704.601	Eu	30 w	-
4713.13	Ne	-	[100]	4708.46	A I	-	[2]	4704.596	Cu I	200	50
4713.100	Pr	30	-	4708.370	Nd	3	-	4704.58	Tb	2	-
4713.074	Sm II	100	-	4708.288	Cb	50	30	4704.493	Er	2	-
4713.060	Er	2	-	4708.225	Mo	30	30	4704.48	Sb II	-	10
4713.059	Nd	30	2	4708.21	Xe I	-	[5]	4704.476	U	3	3
4713.046	Cb	2	3	4708.186	La I	25	2	4704.408	Sm II	200	-
4712.934	La II	100 r	150	4708.184	Ir	4	-	4704.395	Ne I	-	[1500]
4712.82	Yb	-	30 h	4708.163	U	-	2	4704.386	Co I	3	-
4712.819	Gd	25	40	4708.155	Pr	50	10 w	4704.289	Gd	4	-
4712.800	Ne I	-	[10]	4708.043	Pd I	2	-	4704.15	Tb	2	-
4712.8	bh Sr	2	-	4708.040	Cr I	200	150	4704.081	Rh I	10	4
4712.783	Re	20 w	-	4708.040	Nd	2	-	4704.054	Ir	12	-
4712.63	Xe	-	[20]	4707.95	Tb	25	-	4704.012	Ce	8	-
4712.491	W	18	5	4707.940	Ce	8	-	4703.998	Pr	4	-
4712.421	Eu	4	-	4707.939	Pr	50	10 w	4703.992	Th	3	1
4712.395	Th	4	3	4707.891	Gd	30	30	4703.984	Sr I	2	-
4712.285	Pr	5	-	4707.83	I	-	[8]	4703.930	Cb	3 h	5 h
4712.150	U	4	8	4707.82	As II	-	200	4703.887	Eu	8 W	-
4712.135	Ne I	-	[15]	4707.786	Zr I	5	-	4703.864	Nd	15	-
4712.105	Eu	2	-	4707.754	Cr	8	1	4703.808	Ni I	200	-
4712.069	Ni I	30	-	4707.580	Nd	15	-	4703.779	Ce	2	-
4712.060	Ne I	-	[1000]	4707.541	Pr	80	10 w	4703.768	Er	3	-
4712.02	Mn	5	-	4707.489	Fe I	3	-	4703.767	Re	2	-
4711.989	Ru	12	-	4707.441	V I	6	5	4703.610	Hf II	4	12
4711.983	Gd	30	30	4707.3	bh Sc	5	-	4703.576	Nd	20	-
4711.96	Sb	-	3 h	4707.288	Sr I	10	-	4703.471	Dy	5	2
4711.916	Zr I	15	-	4707.281	Fe I	100	12	4703.36	A II	-	[10]
4711.876	Cb	3 h	3	4707.277	Ce	2 h	-	4703.358	Eu	4	-
4711.85	Ir	2	-	4707.255	Mo	125	125	4703.278	La II	200 r	300 r
4711.840	Pr	15	-	4707.005	Ce	2	1	4703.258	Pr	3	-
4711.732	Sc I	6	3	4707.0	bh Sc	10	-	4703.14	O II	-	[30]
4711.72	Tm	10	2	4706.967	Sc I	10	5	4703.136	Gd	50	20
4711.69	Tb	4	-	4706.960	Nd	40	-	4703.12	Hf	20	-
4711.40	I	-	[15 h]	4706.94	Rh	2 h	-	4703.074	Nd	3	-
4711.343	Pr	2	-	4706.782	Dy	4	-	4703.054	Er	2	-
4711.26	Sb II	-	[100]	4706.76	U	2	3	4703.035	Zr II	2	3
4711.240	Re	2	-	4706.730	Er	2	-	4703.02	Mg I	8 r	3
4711.188	W	15	3	4706.7	bh Yt	10	-	4702.886	Pr	3	-
4711.17	Tb	4	-	4706.572	V I	20	15	4702.737	Ce	3	-
4711.16	Te	-	[70]	4706.556	Sm II	5	-	4702.644	La I	9	3
4710.76	Tb	3	-	4706.548	Pr	2	-	4702.621	Eu	15	-

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4702.605	Ir	7	-	4698.99	O II	- [30]	Mh	4694.84	Kr I	- [4]	Me
4702.526	Ne I	- [150]	Ps	4698.947	Cr	15	-	4694.667	Pr	4	-
4702.517	U	10	20	4698.858	Pr	4	-	4694.658	W	12	1
4702.471	W	15	5	4698.815	U	8 _r	-	4694.57	Tm	5	-
4702.46	I II	- [8]	Mu	4698.784	Mo	2	4	4694.55	N II	- [10 h]	Fl
4702.450	Pr	4	-	4698.778	Th	2	2 w	4694.513	Cb	5	8
4702.42	Tb	80	-	4698.765	Ti I	100	20	4694.44	Kr II	- [200 hl]	Me
4702.345	Yb	4	-	4698.687	Dy	10	8	4694.354	Dy	5	2
4702.323	Gd	50	100	4698.633	W	15	1	4694.348	Ce	3 l	-
4702.320	Th	4	2	4698.615	Cr I	40	8	4694.339	Gd	50	8
4702.316	A I	- [1200]	I	4698.58	Tm	5	-	4694.27	Tm	10	3
4702.202	W	5	-	4698.56	P	- [30]	Gu	4694.13	S I	- [50]	Ms
4702.167	Er	3	2	4698.56	Br	- [2]	Bl	4694.092	Th	15	10
4702.053	Cb	3 _h	4	4698.52	Tb	5	-	4693.99	Dy	2	-
4702.047	U	8	18	4698.456	Cr I	60	12	4693.949	Cr	50	20
4702.008	Ce	6	-	4698.408	Ni I	30	-	4693.931	Mo	20	25
4701.97	Ra I	- [4]	Rs	4698.383	Pr	4	-	4693.751	Pr	10 w	-
4701.922	Th	2	-	4698.379	Co I	300	8	4693.729	W	50	12
4701.8	Hg I	- [5]	Wd	4698.297	Nd	15	2	4693.679	Ti I	25	3
4701.793	Cs II	- [25]	Ot	4698.276	Sc II	5	15	4693.672	Dy	3	2
4701.70	Rn	- [50]	Rc	4698.22	Er	3	-	4693.630	Nd	20	1
4701.69	Ho	2	2	4698.15	Tm	10	-	4693.629	Sm II	50	-
4701.600	W	7	-	4698.136	Eu	300	2	4693.580	Ce	2	-
4701.55	Tm	15	-	4698.105	W	10	1	4693.403	Re	5 w	-
4701.55	Tb	2	-	4698.01	Xe II	- [150 hl]	Hu	4693.347	Ta	150	3
4701.536	Ni I	150	-	4698.006	Pr	5	-	4693.342	Mo	2	3
4701.481	In	- 35	-	4697.752	Cb	2 _h	3 h	4693.34	Xe II	- [10 hl]	Hu
4701.445	Ce	8	-	4697.63	Tm	5	-	4693.27	Br	- [40]	Bl
4701.40	Br	- [5]	Bl	4697.6	bh C	-	L	4693.212	Co I	500	25
4701.336	Ni I	100	-	4697.589	Eu	10	-	4693.11	Tb	20	-
4701.324	Ta	150	2 h	4697.490	Cu I	60 w	5 w	4692.968	Nd	8	-
4701.296	Al	- 6	-	4697.488	Gd	100	4	4692.737	Dy	3	2
4701.234	U	12	-	4697.470	Cb	8	5	4692.7	bh Sr	-	L
4701.16	O II	- [20]	Mh	4697.395	Cr	15	1	4692.694	Mo	2	4
4701.16	Ho	2	1 h	4697.395	Th	5 wh	-	4692.658	Pr	10	-
4701.159	Mn	100	5	4697.295	Pr	4	1	4692.635	Eu	60 w	2
4701.052	Fe I	2	-	4697.289	Nd	6	-	4692.502	La II	200	300
4701.02	Yt I	4	2	4697.173	Er	4	2	4692.33	Br	- [8]	Bl
4700.980	U	5	12	4697.08	Dy	3	-	4692.062	Os	80	3
4700.910	Cb	3 h	5	4697.062	Cr I	50	12	4692.055	Ce	4	1
4700.79	P II	- [50 l]	Gu	4697.021	Xe I	- [300]	IMe	4692.047	U	-	3
4700.783	Er	4	-	4696.943	Ne I	- [5]	Ps	4692.019	Pr	4	-
4700.711	Rh I	2	-	4696.938	Ti I	15	3	4692.008	Mo	5	6
4700.710	U	8	12	4696.909	Mn	12	-	4691.961	Yt I	2	-
4700.66	Tb	3	-	4696.805	Yt I	5	3	4691.900	Ta	400	5 h
4700.645	Pr	9	-	4696.789	Ce	2	-	4691.789	Pr	9	-
4700.624	Ce	2	-	4696.613	Gd	25	2	4691.732	Zr I	3	-
4700.608	Cr I	50	4	4696.523	Ce	3	-	4691.622	Ba	100	40
4700.490	Mo	25	25	4696.508	Mo	8	10	4691.580	Ne I	- [15]	Ps
4700.469	Ne I	- [5]	Ps	4696.445	Nd	30	-	4691.554	W	6	2
4700.436	Ba I	25	3	4696.440	Pr	4	-	4691.54	Cl I	-	[8]
4700.433	Re	20	-	4696.43	Br	- [2]	Bl	4691.504	Tm	5	-
4700.419	Eu	6 W	-	4696.416	Sm	4	-	4691.414	Fe I	80	10
4700.411	W	50	4	4696.35	Te	- [50]	Bl	4691.37	O II	- [15]	Mh
4700.39	Tb	2 h	-	4696.322	Rh I	30	-	4691.338	Ti I	125	25
4700.292	Ru	6	-	4696.32	O II	- [30]	Mh	4691.28	Kr II	-	[100]
4700.272	Er	4	-	4696.3	Bi II	- 7	MI	4691.24	Br	- [2]	Bl
4700.263	La	8	3	4696.25	S I	- [15]	Ms	4691.177	La II	10	25
4700.22	Sb II	- 2	Dv	4696.25	Hg II	- [5]	Nu	4691.17	Gd	25	2
4700.21	S II	- [5]	Hn	4696.085	U	2	1	4691.10	Tm	35	20
4700.176	Zr I	3	-	4695.98	Tb	3	-	4691.097	Er	2	-
4700.150	Th	6	4	4695.965	Hf	5	-	4691.06	Th	3	2
4700.118	Pr	4	-	4695.862	Mo	4	6	4690.971	Xe I	- [100]	IHu
4700.110	Zr	3	-	4695.767	Pr	60	2	4690.859	Mo	20	25
4699.80	Tb	2 h	-	4695.66	Kr II	- [50 hl]	Me	4690.834	Ce	2	-
4699.715	Hf II	20	25	4695.637	U	1	3	4690.815	Yb	2	5
4699.710	Er	2	-	4695.610	Cs	- [10]	Sv	4690.805	Ti I	15	2
4699.696	Re	6	-	4695.486	Gd	25	10	4690.739	U	1	3
4699.69	Kr II	- [30 whl]	Me	4695.484	Th	2	-	4690.712	Ce	2	-
4699.627	La II	200 r	200 r	4695.467	Cb	5	8	4690.660	Th	3	3
4699.62	Xe II	- [3 h]	Hu	4695.45	S I	- [30]	Ms	4690.576	Pr	10	-
4699.589	Cr	30	1	4695.363	Ne I	- [20]	Ps	4690.497	Ce	2	-
4699.582	Pr	8	-	4695.339	Eu	10 w	1	4690.344	Nd	30	-
4699.552	Cb	- 15 h	-	4695.305	La I	4	-	4690.27	Eu	3 W	-
4699.395	Eu	6 W	-	4695.242	Ru I	10	-	4690.23	Dy	3	-
4699.345	Sm II	50	-	4695.241	Dy	8	2	4690.170	Ce	2	-
4699.315	V I	9	8	4695.233	U	8	6	4690.144	Fe I	7	-
4699.28	Ra I	- [40]	Rs	4695.153	Cr	50	4	4690.106	Ru I	25	-
4699.244	Yt I	2	-	4695.14	Gd	15	-	4689.889	Ru	5	-
4699.24	Tb	5	-	4695.125	U	1	2	4689.776	Yt I	5	2
4699.227	Er	5 l	-	4695.038	Zr I	3	-	4689.77	Lu	4	-
4699.21	O II	- [100]	Fl	4695.011	Re	40	-	4689.768	Dy	8	-
4699.187	Co I	25	-	4694.95	Sb II	- [6]	Lg	4689.73	Eu	4 W	-
4699.128	Ce	2	-	4694.919	Th	3	2	4689.588	Nd	25	-
4699.013	Hf	30	4	4694.880	Ce	4	-	4689.578	Sm II	10	-

4689.5—4678.2 A.

Wave-length	Element	Intensity Arc	Spk., [Dis]	R	Wave-length	Element	Intensity Arc	Spk., [Dis]	R	Wave-length	Element	Intensity Arc	Spk., [Dis]	R
4689.557	Pr	15	-	-	4685.232	Ce	3	-	-	4682.125	La II	3	3	-
4689.545	Re	3	-	-	4685.223	In II	-	[100]	Ps	4682.056	Pr	3	-	-
4689.503	Ce	2	-	-	4685.189	Zr II	2	3	-	4682.03	Dy	3	2	-
4689.49	Ir	3	-	Me	4685.135	Cb	15	20	-	4682.00	In	-	250 W	Sq
4689.459	Rh	2	-	-	4685.10	Tm	25	-	-	4681.990	Cu II	-	20	Sh
4689.374	Cr I	80	35	-	4685.06	Ir	4	-	Me	4681.944	Er	4 d	-	-
4689.341	Pr	4	-	-	4685.040	In II	-	[10]	Ps	4681.933	Mo	3	3	-
4689.173	Th	10	6	-	4685.013	Ti	2	-	-	4681.930	Ne I	-	[20]	Ps
4689.160	Cb	3	2	-	4684.936	Pr	125	10 w	-	4681.92	Tm	50	2	-
4689.10	Tb	3	-	-	4684.934	In II	-	[15]	Ps	4681.916	Ti I	200	100	-
4689.074	U	30	40	-	4684.9	Pb II	-	[5]	Ea	4681.9	bh C	-	-	L
4689.039	Pr	3	-	-	4684.890	Nd	3	-	-	4681.888	Re	2 h	-	-
4688.906	Gd	5	-	-	4684.867	Ta	100	2	-	4681.875	Ta	200	50	-
4688.889	Ce	6	-	-	4684.82	Eu	4 w	-	-	4681.87	Tb	15	-	-
4688.845	Ta	40	-	-	4684.8	bh C	-	-	L	4681.786	Ru I	100	-	-
4688.735	Sm	50	-	-	4684.760	In II	-	[25 h]	Ps	4681.765	Nd	250	-	-
4688.656	La II	6	20	-	4684.644	U	8	8	-	4681.626	Mo	4	5	-
4688.63	Er	5	2	m	4684.605	Cr	20	-	-	4681.560	Sm	50	-	-
4688.63	Tb	15	-	-	4684.605	Ce	8 s	-	-	4681.558	Er	3	-	-
4688.559	Pr	4	-	-	4684.592	Er	2	-	-	4681.51	Eu	10	1	Kn
4688.557	Nd	5	1	-	4684.587	In II	-	[25]	Ps	4681.428	Os	2	-	-
4688.51	Yb	1	5 h	-	4684.541	Pr	6	-	-	4681.393	Ru	10	-	-
4688.50	Eu	3 w	1	Kn	4684.484	Ti I	7	1	-	4681.32	Sr II	-	[5]	Hn
4688.476	Co I	20	-	-	4684.449	In II	-	[20]	Ps	4681.255	Nd	5	-	-
4688.448	Zr I	50	-	-	4684.447	V I	8	7	-	4681.208	Th	2	2	-
4688.394	Ti I	10	3	-	4684.358	Nd	3	-	-	4681.200	Ne I	-	[50]	Ps
4688.39	Hf	30	4	Me	4684.336	Mo	5	4	-	4681.195	W	10	1	-
4688.3	Kr II	-	[3 h]	Me	4684.316	In II	-	[35]	Ps	4681.183	U	2	4	-
4688.23	Eu	100	2	-	4684.265	Yb	5	-	-	4681.108	In II	-	[200]	Ps
4688.229	Ce	2	-	-	4684.250	Zr I	4	-	-	4681.06	Eu	15	1	Kn
4688.220	Mo	25	30	-	4684.206	Sm	2	-	-	4681.06	Te	-	[15 h]	Bl
4688.20	Ho	2	-	Ex	4684.14	Tb	2	-	-	4681.046	Mo	6	8	-
4688.191	Nb I	-	[2]	Ps	4684.134	U	-	3	-	4681.00	Dy	4	-	m
4688.136	Gd	20	10	-	4684.107	Pt I	5	1	-	4680.993	Ce	3	-	-
4688.132	Sm	4	-	-	4684.10	Ir	6	-	Me	4680.887	V I	4	3	-
4687.858	Re	15	-	-	4684.039	Nd	40	-	-	4680.870	Cr	60	8	-
4687.835	Er	3	-	-	4684.035	Sm	4	-	-	4680.83	Rn	-	[500]	Wa
4687.809	Pr	50	1	-	4684.018	Ru I	100	-	-	4680.734	Nd	50	1	-
4687.803	Zr I	125	-	-	4683.934	Hf	12	-	-	4680.652	Th	4	3	-
4687.781	Cb	5	5	-	4683.836	Pr	3	-	-	4680.65	Gd	3	-	-
4687.770	Cu II	-	2	Sh	4683.827	Mo	6	8	-	4680.544	Cr I	50	25	-
4687.671	Ne I	-	[100]	IMe	4683.819	Yb	7	20	-	4680.520	W	150	40	-
4687.653	W	12	1	-	4683.792	Dy	4	2	-	4680.481	Sc	5	4 h	-
4687.637	Ce	2	-	-	4683.764	Ne I	-	[30]	Ps	4680.472	Pr	4	-	-
4687.43	I I	-	[15]	Bl	4683.719	Mo	5	5	-	4680.465	Ir	2	-	-
4687.28	Kr II	-	[10 hl]	Me	4683.68	Kr II	-	[5]	Me	4680.458	Ce	2	-	-
4687.233	Pr	3	-	-	4683.611	U	2	-	-	4680.41	Kr II	-	[500]	Me
4687.182	Sm II	100	-	-	4683.566	Fe I	6	-	-	4680.363	Ne I	-	[100]	Ps
4686.95	Te	-	[300]	Bl	4683.545	W	20	10	-	4680.318	Pr	2	-	-
4686.922	U	8	-	-	4683.441	Nd	50	-	-	4680.305	Fe I	9	-	-
4686.921	Ti I	8	2	-	4683.430	Pr	3	-	-	4680.138	Zn I	300 w	200 h	IHz
4686.920	V I	15	12	-	4683.421	Zr I	9	-	-	4680.127	Ce	6	-	-
4686.85	Eu	3 W	-	Kn	4683.343	Gd	100	50	-	4680.056	Gd	50	25	-
4686.806	Ce	2	-	-	4683.238	Ne I	-	[5]	Ps	4680.045	Sm	10	-	-
4686.66	Eu	2 W	-	Kn	4683.225	Pr	2	-	-	4679.831	Pr	3	-	-
4686.587	Th	2	1	-	4683.103	Ru	7	-	-	4679.774	V	4	3	-
4686.491	Os	2	-	-	4683.10	Ta	-	15	Ex	4679.62	Tb	2	-	-
4686.42	Tb	3	-	-	4683.10	Si	-	4	Sy	4679.498	Pr	2	-	-
4686.403	Gd	10	5 h	-	4683.072	Ce	2	-	-	4679.48	Eu	4 w	-	Kn
4686.383	W	8	-	-	4683.071	Gd	20	-	-	4679.475	Re	20	-	-
4686.38	Hf	6	-	Me	4683.047	U	2	8	-	4679.45	Xe II	-	[3 h]	Hu
4686.30	Kr II	-	[8 whl]	Me	4682.985	Cb	2	2	-	4679.179	Gd	25	25	-
4686.285	Pr	4	1	-	4682.959	Rh I	3	2	-	4679.135	Ne I	3	[150]	IMe
4686.218	Ni I	200	1	-	4682.910	Ne I	-	[10]	Ps	4679.12	Dy	3	2	m
4686.193	Cr	20	1	-	4682.79	Tb	8	-	-	4679.112	Pr	8	3	-
4686.095	Mo	8	6	-	4682.755	V I	3 h	2 h	-	4679.070	Er	6	2	-
4685.927	Cb	2	2	-	4682.692	Pr	2	-	-	4679.041	W	15	2	-
4685.856	Co I	30	-	-	4682.682	Sm II	20	-	-	4679.039	Pr	5	-	-
4685.837	Ge I	20	-	-	4682.667	Hf II	2	8	-	4678.98	I	-	[8]	Bl
4685.83	Ho	3	2	Ex	4682.664	Cb	2	3	-	4678.94	P II	-	[100 l]	Gu
4685.813	Mo	12	12	-	4682.60	U	-	2	-	4678.908	Nd	2 h	1	-
4685.783	Ru	15	-	-	4682.569	W	12	-	-	4678.852	Fe I	150	100	S
4685.75	He II	-	[300]	Ps	4682.52	Tb	10	-	-	4678.81	Tb	2	-	-
4685.74	N	-	[10]	Du	4682.445	Pr	2	-	-	4678.69	Br	-	[200]	Bl
4685.718	U	10	18	-	4682.376	Co I	500	-	-	4678.621	Ce	2	-	-
4685.70	Eu	3 w	-	Kn	4682.332	Re	30 W	-	-	4678.604	Ne I	-	[50]	Ps
4685.672	Zr	4	-	-	4682.325	Yt II	60	100	-	4678.6	bh C	-	-	L
4685.533	U	1	3	-	4682.312	Os	18	-	-	4678.523	Cb	5	5	-
4685.527	Cb	2	1	-	4682.29	A II	-	[10]	Rt	4678.513	Ce	2	-	-
4685.45	Se II	-	[12]	Bl	4682.28	Ra II	-	[800]	Rt	4678.426	Cb	5	5	-
4685.447	Pr	5	-	-	4682.244	Mo	4	5	-	4678.354	Yt I	2	-	-
4685.3	Hg I	-	[5]	Wd	4682.213	Pr	3	-	-	4678.326	Sr I	20 h	-	ISn
4685.266	Ta	80	2	-	4682.208	Th	4 d	-	-	4678.31	Xe II	-	[2 h]	Hu
4685.265	Ca I	25	1	IWg	4682.146	Ne I	-	[20]	Ps	4678.247	Gd	10 h	10 h	-
4685.25	Eu	60 W	-	Kn	4682.133	U	4	2	-	4678.220	Th	2	-	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities			
		Arc	Spk.,	[Dis.]	R		Arc	Spk.,	[Dis.]	R		Arc	Spk.,	[Dis.]	R
4678.218	Ne I	—	[300]	—	IMe	4674.492	Ce	3	—	—	4670.11	Te	—	[30]	—
4678.204	Mo	3	5	—	—	4674.305	Re	15	—	—	4670.104	Cb	1	4h	—
4678.17	In	—	30	—	Sq	4674.238	Pr	3	—	—	4670.097	Ce	2	—	—
4678.168	Pr	12	2	—	—	4674.228	U	8	8	—	4670.095	Er	2	—	—
4678.156	Cd I	200 W	200 W	—	—	4674.21	Tm	10	—	—	4670.03	Th	3	1	m
4678.123	Sm	3	—	—	—	4674.184	Nd	5	—	—	4670.000	Mo	2	—	—
4678.1	Tl I	8	—	—	Fl	4674.04	Tb	2	—	—	4669.977	Ru I	40	—	—
4678.017	Ta	40	2	—	—	4674.014	Os	3	—	—	4669.871	Cb	3	2	—
4677.94	I II	—	[10]	—	Ke	4673.988	W	2	1	—	4669.77	N	—	[10]	Du
4677.94	N II	—	[10 w]	—	Fl	4673.975	Nd	5	—	—	4669.647	Sm II	50	40	—
4677.898	U	—	4	—	—	4673.80	Kr II	—	[3]	Me	4669.638	Ce	3	—	—
4677.87	Ag	2 h	1 h	—	Kp	4673.772	In II	—	[5]	Ps	4669.637	Mo	2	3	—
4677.85	Tm	50	2	—	—	4673.740	U	—	3 h	—	4669.518	Er	3	—	—
4677.8	Pb II	—	[7]	—	Ea	4673.71	O I, II	—	[30]	Mh	4669.502	Ce	4	—	—
4677.780	Pr	2	—	—	—	4673.661	Th	6	2	—	4669.398	Dy	3	2	—
4677.76	Cl I	—	[4]	—	Ks	4673.621	Ba	40	5	—	4669.39	Tb	3	—	—
4677.694	W	25	3	—	—	4673.615	Dy	10	8	—	4669.390	Sm II	40	35	—
4677.621	Gd	5	—	—	—	4673.61	Tb	4	—	—	4669.38	Se II	—	[10]	Bt
4677.483	Ti I	3	1	—	—	4673.589	Cb	2	5	—	4669.336	Cr I	50	20	—
4677.461	Pd I	8	2	—	—	4673.555	Cu II	—	6	Sh	4669.309	U	8	15	—
4677.407	Rh I	6	2	—	—	4673.462	Be II	—	[100]	Ps	4669.308	V I	10	8	—
4677.31	Tb	2	—	—	—	4673.38	Br	—	[4]	Bl	4669.24	Hf	6	6	—
4677.251	Co I	4	—	—	—	4673.21	Dy	2	—	Ed	4669.184	Fe I	15	2	—
4677.19	Tm	5	—	—	—	4673.172	Fe I	20	2	—	4669.143	Ta	300	15	—
4676.994	Pr	3	—	—	—	4673.1	bh Sc	10	—	Me	4669.14	S	—	[35]	Ms
4676.98	Gd	8	—	m	—	4673.032	Mo	3	3	—	4669.138	Ru	15	—	—
4676.975	Ti I	10	—	—	—	4672.85	Eu	6	—	—	4669.133	Nd	5	—	—
4676.941	I II	—	[80]	—	Ke	4672.75	O I	—	[30]	Ps	4669.02	Ne	—	[50]	Bl
4676.908	Sm II	100	50	—	—	4672.70	As II	—	50	Ro	4668.987	Ir	20	—	—
4676.9	bh Yt	3	—	—	Me	4672.7	Hg I	—	[5]	Wd	4668.941	U	3	3	—
4676.89	Tb	25	—	—	—	4672.687	Nd	5	2	—	4668.914	La II	200 r	300 r	—
4676.88	Te	—	[15]	—	Bl	4672.6	bh Sr	4	—	L	4668.911	W	5	—	—
4676.75	Xe	—	[5 h]	—	Hu	4672.6	bh Sc	10	—	Me	4668.805	Mo	5	5	—
4676.725	Pr	5	—	—	—	4672.595	Pr	3	—	—	4668.69	Tm	10	—	—
4676.632	W	20	2	—	—	4672.56	Br	—	[12]	Bl	4668.597	Na I	200	100	Da
4676.523	Th	2	—	—	—	4672.542	W	3	—	—	4668.58	S II	—	[50]	Hn
4676.46	Xe	—	[100 whl]	—	Hu	4672.482	Dy	5 h	—	—	4668.49	Xe II	—	[50]	Hu
4676.338	Ce	2	—	—	—	4672.46	Nd	2 h	—	Kn	4668.483	Ag I	200	70	—
4676.3	bh Yt	5	—	—	Me	4672.20	Xe II	—	[50 hl]	Hu	4668.462	W	20	3	—
4676.30	U	1	3 h	—	—	4672.2	Be	—	100	Sx	4668.454	Pr	6	—	—
4676.262	Nd	2	2 h	—	—	4672.11	Br	—	[4]	Bl	4668.357	Ti I	8	1	—
4676.246	O II	—	[125]	—	Fl	4672.091	Cb	150	100	—	4668.230	Pr	10	1	—
4676.181	Or	10	8 h	—	—	4672.09	Kr II	—	[2 whl]	Me	4668.23	Gd	12	—	Kn
4676.054	Th	2	—	—	—	4672.081	Pr	100	25 w	—	4668.20	Dy	2	2	m
4676.05	I II	—	[5]	—	Mu	4672.06	Tb	2	—	—	4668.15	I II	—	[10]	Ke
4675.807	Dy	7	2	—	—	4671.98	Tm	15	20	—	4668.149	Th	3	—	—
4675.78	P	—	[70]	—	Gu	4671.898	Mo	30	30	—	4668.14	Eu	15 w	—	—
4675.745	Sb	—	[15]	—	Lg	4671.845	Sm II	2	—	—	4668.140	Fe I	125	10	—
4675.705	Mo	2	4	—	—	4671.833	La II	100	150	—	4667.866	Co	10	—	—
4675.64	Br	—	[4]	—	Bl	4671.8	Li II	—	[4]	Wr	4667.80	Se I	—	[70]	Rd
4675.639	Ni I	8	—	—	—	4671.711	Ce	2	—	—	4667.787	Dy	2	2	—
4675.63	Ho	3	1	—	Ex	4671.693	Cu II	—	10	—	4667.766	Ni I	100	—	—
4675.622	Er	15	4	—	—	4671.688	Mn	100	5	—	4667.59	Er	3	2	m
4675.55	Se	—	[10]	—	Bt	4671.651	W	12	1	—	4667.588	Ti I	150	8	—
4675.537	Ir	15	2	—	—	4671.61	Kr I	—	[10]	Me	4667.542	Os	5	—	—
4675.528	I II	—	[50]	—	Ke	4671.582	Er	3	1	—	4667.462	Yt I	7	—	—
4675.523	Nd	5	—	—	—	4671.408	U	20	30	—	4667.459	Fe I	150	20	S
4675.48	Eu	20 W	—	—	Kn	4671.38	Eu	10	—	—	4667.420	Mo	—	20 l	—
4675.472	Pr	3	—	—	—	4671.370	Ru	5	—	—	4667.41	Eu	3	—	Kn
4675.455	Hf II	10	10	—	—	4671.296	W	3	1	—	4667.364	Ce	2	—	—
4675.390	Re	2 h	—	—	—	4671.226	Xe I	—	[2000]	IMe	4667.356	Ne I	—	[100]	IMe
4675.370	Cb	50 w	30 w	—	—	4671.18	Eu	30	1	m	4667.325	In	—	10	—
4675.312	Ce	2	—	—	—	4671.10	Dy	4	4	m	4667.297	Cu II	—	5	Sh
4675.31	Tm	35	—	—	—	4671.094	Nd	20	—	—	4667.28	N II	—	[5]	Fl
4675.29	Lu	4	1	—	Me	4671.092	Er	2	1	—	4667.28	Tb	3	—	—
4675.18	Tb	2	—	—	—	4670.913	Ce	4	—	—	4667.28	Tm	15	—	—
4675.123	Ti I	50	5	—	—	4670.91	Hf	5	2	Me	4667.223	Cb	15	10	—
4675.093	W	8	1	—	—	4670.909	Mo	2	—	—	4667.217	U	3	5	—
4675.08	Tm	25	—	—	—	4670.884	Ne I	—	[70]	IMe	4667.145	Zr I	5	—	—
4675.038	Pr	5	—	—	—	4670.849	Gd	3	2 h	—	4666.994	Ni I	50	—	—
4675.026	Rh I	100	50	—	—	4670.833	Sm	30	—	—	4666.857	Yt I	2	—	—
4674.98	N II	—	[5]	—	Fl	4670.83	Yt	3	2	m	4666.856	U	25	40	—
4674.89	Cs	—	[10]	—	Bs	4670.82	Tb	5	—	—	4666.804	Th	2	—	—
4674.878	Ce	2 h	—	—	—	4670.768	Sm	30	—	—	4666.8	Al II	—	[5]	Sy
4674.849	Er	50	15	—	—	4670.737	Ce	4	—	—	4666.73	Se II	—	[10]	Bt
4674.848	Yt I	80	100	—	—	4670.686	Os	6	—	—	4666.729	Re	3	—	—
4674.800	Pr	25	—	—	—	4670.575	Yb	12	15	—	4666.707	Ce	2 s	—	—
4674.76	Cu II	200	30 W	—	Hs	4670.560	Nd	20	—	—	4666.701	Tm	8	2	—
4674.654	Ru I	20	—	—	—	4670.543	Pr	10	—	—	4666.654	Ne I	—	[50]	Ps
4674.62	Ho	4	3	—	Ex	4670.489	V I	60 R	40 r	—	4666.59	Eu	5 w	—	—
4674.61	Dy	3	—	—	—	4670.445	Ce	2 h	—	—	4666.548	Dy	4	2	—
4674.595	Nd	50	10	—	—	4670.404	Sc II	100	300 wh	—	4666.52	I II	—	[250]	Ke
4674.592	Sm II	80	40	—	—	4670.280	Cs II	—	[20]	Sv	4666.512	Cr I	50	25	—
4674.56	Xe II	—	[25]	—	Hu	4670.241	Mo	5	5	—	4666.50	Pr	2	—	—
4674.519	Ru	7	—	—	—	4670.23	Tb	3	—	—	4666.49	Mn	12	—	—

4666.4—4655.1 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4666.443	Gd	25 10	-	4662.41	Cr	5	-	4658.361	Pr	3	-
4666.39	Yt I	3 1	m	4662.4	Hg I	-	[5]	4658.323	Yt I	8	15
4666.28	A II	-	[2 h] Rt	4662.352	Cd I	8 r	-	4658.258	W	1	8
4666.28	Xe II	-	[25 h] Hu	4662.258	Ce	2	-	4658.187	Nd	5	-
4666.240	Cb	30 15	-	4662.241	Ru I	5	-	4658.185	Cb	2	3
4666.24	Br	-	[4] Bl	4662.20	Dy	3	-	4658.11	P II	-	[100 I] Gu
4666.215	Cr	35 8	HI	4662.16	Tb	3	-	4658.09	Pr	20	1
4666.171	Pr	2	-	4661.976	Fe I	9	-	4658.042	Ce	2	-
4666.14	Er	2	-	4661.970	W	15	2	4658.02	Lu	100	15
4666.136	V I	10 9	-	4661.934	Mo	25	25	4658.0	bh Pb	5	-
4666.126	Rh I	2 h	-	4661.88	Eu	100	-	4657.956	Pt I	9	4
4666.021	U	3 6	-	4661.872	Eu	80 R	20	4657.94	A	-	[150] Rt
4666.003	Th	8 4	-	4661.87	Mn	15	-	4657.907	Sb II	-	30
4665.945	Pr	3	-	4661.85	Tb	2	-	4657.9	Rb	-	[8] Sp
4665.92	Dy	2	-	4661.832	Yb	6 h	-	4657.822	Ce	2	-
4665.902	Cr	20 10	-	4661.78	P	-	[15]	4657.641	Zr I	6	-
4665.834	Sc	6 7	-	4661.778	Zr II	2 4	-	4657.64	Ir	4	-
4665.827	U	3	-	4661.652	U	8	2 h	4657.622	Pr	2	-
4665.749	W	-	12	4661.650	O II	-	[125]	4657.553	U	2	3
4665.5	Pb II	-	[5] Ea	4661.621	Ce	4	-	4657.48	Dy	2	2
4665.45	Tb	10	-	4661.537	Fe	2 h	-	4657.478	Mo	10	10
4665.42	Er	6 2	-	4661.478	Re	10	-	4657.460	Mn	10	-
4665.380	Mo	5 5	-	4661.390	Er	2	-	4657.436	W	50	12
4665.330	Cb	2 h	2 h	4661.350	Cu II	-	3	4657.387	Co I	100	35
4665.33	Te	-	[70] Bl	4661.33	Ho	4	3	4657.35	I II	-	[8] Ka
4665.276	Ce	2	-	4661.281	Nd	2 h	-	4657.33	Tb	3	-
4665.230	Re	2	-	4661.233	W	12	2	4657.251	Os	6	-
4665.19	U	-	2	4661.225	Er	3	-	4657.235	Pr	3	-
4665.111	Sm II	20	-	4661.22	Cl I	-	[15]	4657.219	Nd	4	-
4665.07	Eu	30 W	-	4661.117	Ta	300	5 h	4657.210	Ce	3 I	-
4664.999	Ru	10	-	4661.104	Ne I	-	[150]	4657.210	Ti II	5	18
4664.98	Se I, II	-	[150] Rd	4661.05	Eu	15 W	-	4657.075	In II	-	[30] Ps
4664.963	Rh	2 h	-	4660.924	U	1 h	2 h	4657.044	Er	2	1
4664.858	Na I	80	-	4660.915	Pr	25	-	4657.04	Yb	5 w	-
4664.798	Cr I	70 20	-	4660.802	Dy	4	4	4657.036	W	7	1
4664.675	Dy	10 8	-	4660.73	Mn	5	-	4657.017	Ce	2	-
4664.67	Ir	6	-	4660.701	La I	5	2	4656.997	In II	-	[30] Ps
4664.647	Pr	100 15	-	4660.642	Ru	7	-	4656.812	In II	-	[35] Ps
4664.64	Tb	5	-	4660.544	Re	15	-	4656.764	Pr	5	-
4664.513	Sm	2	-	4660.472	Nd	3	-	4656.74	S II	-	[80] Hn
4664.487	Ti	2	-	4660.452	Sm	2 h	-	4656.73	Eu	50	1
4664.446	Nd	15	-	4660.44	Tb	2	-	4656.707	In II	-	[5] Ps
4664.34	Te	-	[800] Bl	4660.41	Cb	-	2 h	4656.677	Er	3	2
4664.24	Gd	25 2	m	4660.37	Eu	50	1	4656.67	I I	-	[25] Db
4664.235	Er	2	-	4660.294	Cu II	-	2	4656.603	Ce	3	-
4664.220	Th	4 I	-	4660.28	Hg II	-	[200]	4656.544	In II	-	[20] Ps
4664.20	Se I	-	[150] Rd	4660.277	Nd	10	-	4656.538	Cs	-	[12] Sv
4664.123	Hf II	50 100	-	4660.17	Tb	3	-	4656.49	Re	10	-
4664.09	U	-	2 h	4660.156	Pr	3	-	4656.470	Ti I	150	70
4664.070	Ce	3	-	4660.05	N	-	[5]	4656.420	Ru I	12	-
4664.02	Tb	2	-	4659.96	Er	3 Wh	-	4656.407	In II	-	[10] Ps
4664.012	Nd	2	-	4659.937	Ce	3	-	4656.392	Ne I	-	[300] IMe
4663.832	Cr I	50 15	-	4659.89	Se	-	[20]	4656.368	Mo	5	8
4663.831	Cb	30 20	-	4659.867	W	200	70	4656.35	Sb II	-	[15] Lg
4663.822	Os	100 5	-	4659.850	U	1	2	4656.302	In II	-	[10] Ps
4663.765	La II	100 200	-	4659.847	Gd	10	10	4656.237	Mn	10	-
4663.755	U	18 3	-	4659.845	Pr	5	-	4656.22	Se	-	[20] Bt
4663.723	Pr	3	-	4659.710	Pr	3	-	4656.215	Mo	3	3
4663.672	I	-	[15] Ke	4659.63	Tb	2	-	4656.189	Cr	50	4
4663.546	Sm	60	-	4659.596	Ti	2	-	4656.187	Ce	2	-
4663.52	Ra II	-	[6] Ra	4659.50	Pr	2	-	4656.178	Ir	60	-
4663.518	Ne I	-	[20] Ps	4659.497	Dy	2	2	4656.047	Mo	5	5
4663.410	Co I	700 W	-	4659.488	Zr I	5	-	4656.045	Ti I	20	3
4663.328	Cr I	40 25	-	4659.42	Ir	2	-	4656.005	Ce	3	-
4663.237	Ce	3	-	4659.400	Ce	6	6	4655.993	Pr	5	-
4663.235	Er	2	-	4659.373	Nd	10	-	4655.905	Er	3 hl	-
4663.153	Pr	2	-	4659.353	U	1	3	4655.790	In II	-	[100] Ps
4663.108	Mo	3 3	-	4659.34	Mn	8	-	4655.702	Ti I	8	2
4663.10	Dy	3 2	-	4659.320	Rb II	-	[8]	4655.661	Ni I	40	-
4663.092	Ne I	-	[40] Ps	4659.317	K II	-	[40]	4655.657	In II	-	[50] Ps
4663.010	Re	4 h	-	4659.21	Hf II	8	8	4655.523	In II	-	[45] Ps
4663.00	Ba I	5	-	4659.03	Lu	10	1	4655.497	La II	150	300
4662.968	Nd	5	-	4658.890	Yt I	5	4	4655.45	Tb	2 h	-
4662.961	Zr I	3	-	4658.87	Kr II	1	[2000]	4655.409	In II	-	[45] Ps
4662.960	Ir	8	-	4658.807	U	1	2	4655.361	Sm II	2 h	-
4662.79	Tb	20	-	4658.778	Mn	25	-	4655.36	O I	-	[50] Ps
4662.77	Pr	2	-	4658.733	Pr	15	-	4655.323	Cb	-	2
4662.762	Mo	40 40	-	4658.73	Tb	25	-	4655.319	U	2	3
4662.746	Dy	4 2	-	4658.61	Eu	8	-	4655.227	Ce	2	-
4662.634	Cu II	-	5	4658.610	Gd	5	-	4655.209	W	6	-
4662.595	W	3	-	4658.567	Os	6 h	-	4655.204	Th	2	-
4662.539	U	-	3	4658.544	Mo	4	5	4655.202	Os	3	-
4662.511	La II	150 200	-	4658.47	Er	2	-	4655.186	Hf	50	4
4662.496	Re	25	-	4658.38	Mn	12	-	4655.133	U	2	6
4662.493	Ru II	7	-	4658.38	Tb	40	-	4655.124	Sm II	15	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4655.119	Er	4	-	-	-	4651.285	Cr I	100	100	-	-	4648.077	Sm	7	-	-	-
4655.08	Tm	35	-	-	-	4651.194	Nd	12	-	-	-	4648.05	Ti	15 W	-	-	-
4655.05	Al II	-	[2]	Sy	-	4651.134	Cu I	250	40	-	-	4647.946	Nd	2	-	-	-
4654.990	Gd	15	15	-	-	4651.1	Cs	-	[10]	Bs	-	4647.943	Pr	8 w	-	-	-
4654.849	Co I	25	-	-	-	4651.077	Ir	4	-	-	-	4647.919	Sb II	-	[20]	Lg	-
4654.836	U	-	2 h	-	-	4651.07	Tb	4	-	-	-	4647.897	Th	2	-	-	-
4654.795	Ru	7	-	-	-	4651.067	Ce	2 h	-	-	-	4647.870	U	3	6	-	-
4654.765	Gd	3	-	Kn	-	4651.049	Mo	15	15	-	-	4647.814	Mo	25	25	-	-
4654.74	Dy	4	2	m	-	4651.017	Nd	15	-	-	-	4647.759	Nd	8	-	-	-
4654.736	Cr I	70	8	-	-	4650.923	Th	3	2	-	-	4647.704	Sb	-	20	Sp	-
4654.728	Nd	30 d	-	-	-	4650.88	Pr	4	8 h	-	-	4647.658	Gd	8	8	-	-
4654.624	Fe I	10	-	-	-	4650.853	O II	-	[70]	Fl	-	4647.606	Ru	125	-	-	-
4654.57	N II	-	[5]	Fl	-	4650.833	Re	2 h	-	-	-	4647.585	Mn II	-	[4]	Cz	-
4654.56	O I	-	[30]	Ps	-	4650.81	Er	2	-	m	-	4647.544	Sm II	8	-	-	-
4654.553	Re	10 h	-	-	-	4650.646	Al II	-	[6]	Sy	-	4647.51	Te	-	[50]	Bl	-
4654.503	Fe I	20	3	-	-	4650.603	Hf	10	3 h	-	-	4647.509	La II	10	50	-	-
4654.38	Te	-	[800]	Bl	-	4650.58	Os	2	-	Me	-	4647.493	A I	-	[40]	Ms	-
4654.379	Zr I	3	-	-	-	4650.544	Al II	-	[8]	Sy	-	4647.49	Eu	15 w	-	Kn	-
4654.315	Ru I	125	-	-	-	4650.516	Ce	6	-	-	-	4647.47	Re	10 h	-	m	-
4654.291	Nd	6	-	-	-	4650.48	Eu	10	-	-	-	4647.438	Hf	6	-	-	-
4654.288	Sm	3	-	-	-	4650.44	Pr	8 w	-	-	-	4647.437	Fe I	125	40	S	-
4654.286	Ce	6	-	-	-	4650.38	Ca	-	3 wh	-	-	4647.316	Sb II	-	[80]	Lg	-
4654.23	O I	-	[15]	Ps	-	4650.345	Er	2	-	-	-	4647.298	Dy	3	2	-	-
4654.08	Si	-	8	Sy	-	4650.331	La I	8	4	-	-	4647.280	Co	3	-	-	-
4654.06	Cl I	-	[8]	Ks	-	4650.234	Nd	25	-	-	-	4647.25	Ho	2	-	Ex	-
4654.035	Pr	8	1	-	-	4650.216	Ru	5	-	-	-	4647.23	Tb	15 d	-	-	-
4654.0	Eu	6 w	-	Kn	-	4650.2	bh Yt	15	-	Me	-	4646.991	Pr	25	-	-	-
4653.935	Mo	-	8	-	-	4650.17	Kr II	-	[30]	Me	-	4646.950	Cb	5	10	-	-
4653.900	La I	4	2 h	-	-	4650.16	Dy	4	-	-	-	4646.943	Co	2	-	-	-
4653.866	Ce	2	-	-	-	4650.08	Pr	3	-	-	-	4646.93	Sm	3	-	-	-
4653.81	Pr	3	-	-	-	4650.075	Yb	15	-	-	-	4646.91	Tb	3	-	-	-
4653.790	Yt I	2	-	-	-	4650.07	Pt	3	-	Me	-	4646.9	bh Yt	5	-	Me	-
4653.744	Ru	10	-	-	-	4650.019	Ti I	60	4	-	-	4646.825	Er	3	-	-	-
4653.699	Ne I	-	[50]	Ps	-	4650.000	U	5	5	-	-	4646.808	Cr I	35	3	-	-
4653.688	Mo	3	4	-	-	4649.904	Ne I	-	[70]	IMe	-	4646.802	Ru	6	-	-	-
4653.64	Pr	4	1	-	-	4649.889	Ce	6	-	-	-	4646.73	Dy	2	-	-	-
4653.548	Gd	15	2	-	-	4649.840	Pr	6	-	-	-	4646.692	Nd	60	4	-	-
4653.48	Eu	25 w	-	m	-	4649.77	Ho	8	1 h	Ex	-	4646.679	Sm II	50	-	-	-
4653.46	Tb	2 h	-	-	-	4649.70	Re	2	-	-	-	4646.636	Th	2	-	-	-
4653.442	U	8	10	-	-	4649.669	Nd	40	-	-	-	4646.603	U	25	40	-	-
4653.404	Ti	5	-	-	-	4649.5	bh Yt	10	-	Me	-	4646.508	Ca II	-	[25]	Sv	-
4653.4	Hg I	-	[5]	Wd	-	4649.489	Sm	25	-	-	-	4646.495	Cr	5	1	-	-
4653.381	Ce	2	-	-	-	4649.477	Ce	2	-	-	-	4646.484	Mo	3	4	-	-
4653.32	Sb II	-	[15]	Lq	-	4649.463	Dy	3	4	-	-	4646.399	Nd	50	-	-	-
4653.309	Er	3	-	-	-	4649.461	Cr	60	3	-	-	4646.395	V I	40	30	-	-
4653.301	Nd	5	-	-	-	4649.42	Pr	4	-	-	-	4646.343	La I	8	3	-	-
4653.062	U	1	2	-	-	4649.269	Cb	3 wh	5 wh	-	-	4646.336	Gd	12	6	-	-
4653.01	Tm	25	15	-	-	4649.266	Cu II	-	60	Sh	-	4646.30	Eu	3 w	-	-	-
4653.0	Al II	-	[2]	Sy	-	4649.183	Re	2	-	-	-	4646.174	Cr I	100	150	-	-
4653.00	Xe II	-	[25]	Hu	-	4649.17	Xe	-	[2 h]	Hu	-	4646.149	W	15	3	-	-
4652.85	Tb	4	-	-	-	4649.148	O II	-	[300]	Fl	-	4646.059	Pr	50	8	-	-
4652.678	Pr	5	-	-	-	4649.117	Mo	15	15	-	-	4646.04	Tm	5	-	-	-
4652.678	Nd	5	-	-	-	4649.100	U	2	4 h	-	-	4646.01	Gd	12	1	-	-
4652.663	Sm	4	-	-	-	4649.088	Pr	3	10 h	-	-	4645.86	Er	2	-	-	-
4652.501	Ru	5	-	-	-	4649.08	Er	2	-	Ed	-	4645.83	Tm	10	-	-	-
4652.4	bh Sr	3	-	L	-	4649.05	P	-	[50]	Gu	-	4645.765	Nd	20	2	-	-
4652.390	Nd	15	-	-	-	4649.04	Eu	8 w	-	-	-	4645.73	Eu	8 w	-	-	-
4652.323	Gd	8	8 h	-	-	4649.01	Mn	2 h	-	-	-	4645.523	U	2	3	-	-
4652.323	Re	30	-	-	-	4648.949	Cb	50	20	-	-	4645.495	Th	3 w	-	-	-
4652.285	Mo	5 h	5 h	-	-	4648.890	V I	9	8	-	-	4645.485	Pr	4 w	-	-	-
4652.182	Cb	-	2 h	-	-	4648.868	Cr	50	3	-	-	4645.47	Lu	25 h	2	Me	-
4652.158	Cr I	200 R	150	-	-	4648.85	Lu	25 h	-	Me	-	4645.416	Ne I	-	[300]	IMe	-
4652.14	Ir	2	-	Me	-	4648.826	Ce	4	-	-	-	4645.399	Sm	40	4	-	-
4652.13	Yt I	2	2	m	-	4648.704	Gd	8	-	-	-	4645.379	Mo	4	4	-	-
4652.109	Hf	6 h	6 h	-	-	4648.70	Se	-	[2]'	Bl	-	4645.281	La II	25	40	-	-
4652.101	Ne I	-	[30]	Ps	-	4648.659	Ni I	400 w	3	-	-	4645.26	Tb	60 W	-	-	-
4652.084	La I	5	4	-	-	4648.652	Co I	5	-	-	-	4645.22	Te	-	[15]	Bl	-
4652.027	Th	6	3	-	-	4648.649	La I	15	8	-	-	4645.194	Ti I	100	10	I	-
4652.015	Er	3	2	-	-	4648.630	Sm II	2	-	-	-	4645.111	Pr	3	-	-	-
4651.99	Br	-	[25]	Bl	-	4648.62	Al II	-	[4]	Sy	-	4645.089	Ru	100	30	-	-
4651.94	Xe II	-	[100]	Hu	-	4648.585	Gd	8	-	Kn	-	4645.035	Mn	40	-	-	-
4651.823	Re	3	-	-	-	4648.58	Re	4	-	m	-	4644.979	Nd	5	-	-	-
4651.691	Ce	2 h	-	-	-	4648.562	Rb II	-	20	Rr	-	4644.95	Re	15	-	m	-
4651.66	Yb	5	-	-	-	4648.546	Pr	3	-	-	-	4644.926	W	8	-	-	-
4651.60	Tb	4	-	-	-	4648.49	Sb II	-	[4]	Lg	-	4644.910	U	2	3	-	-
4651.563	Nd	8	-	-	-	4648.44	Se II	-	[800]	Bl	-	4644.845	Nd	4	2 w	Kn	-
4651.556	Th	30	15	-	-	4648.338	Hf	10	2 h	-	-	4644.833	Ne I	-	[40]	Ps	-
4651.55	Eu	5	-	Kn	-	4648.32	As	-	30	Ro	-	4644.829	Zr I	5	-	-	-
4651.546	U	6	8	-	-	4648.32	Tb	6	-	-	-	4644.7	bh Zr	40	-	L	-
4651.541	Dy	4	2	-	-	4648.24	Ir	3	-	Me	-	4644.648	In II	-	[60]	Ps	-
4651.517	Pr	125	40 w	-	-	4648.21	Lu	25 h	2	Me	-	4644.57	Tm	20	-	Me	-
4651.40	Er	2	-	-	-	4648.17	S II	-	[35]	Hn	-	4644.543	Yb	30	3	-	-
4651.39	Ho	2	-	Ex	-	4648.164	Sm II	12	-	-	-	4644.536	In II	-	[125]	Ps	-
4651.388	A I	-	[20]	Ms	-	4648.154	Ru	6	-	-	-	4644.445	V I	6	5	-	-
4651.38	Br	-	[4]	Bl	-	4648.126	Cr	40	6	-	-	4644.371	Th	3 w	-	-	-

4644.3—4633.2 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk.,	[Dis.] R			Arc	Spk.,	[Dis.] R			Arc	Spk.,	[Dis.] R
4644.37	Er	3	-	Ed	4640.79	Tm	2	-	-	4637.25	A II	-	[30]	Rt
4644.36	Ir	3	-	Me	4640.735	V I	25	20	-	4637.209	Ti I	4	-	-
4644.324	Co I	70	-	-	4640.73	Ta	15 w	-	-	4637.206	Nd	10	-	-
4644.24	Eu	50	-	Kn	4640.66	Hg II	-	[2]	m Ps	4637.182	Cr	20	8	-
4644.204	Ce	6	6	-	4640.61	Ho	2	-	Kn	4637.16	P	-	[50]	Gu
4644.18	Rn	-	[300]	Wa	4640.606	Er	4	2	-	4637.112	In II	-	[10]	Ps
4644.15	Tb	2	-	-	4640.6	bh Zr	150	-	L	4637.08	Dy	3	2	-
4644.137	U	1	3	-	4640.53	Gd	4	-	-	4637.025	In II	-	[20]	Ps
4644.10	Ba	-	[10]	Rs	4640.512	Sm	3	-	-	4636.99	Tb	10	-	-
4644.01	Br	-	[4]	Bl	4640.46	air	-	10	Sq	4636.974	Ne I	-	[50]	Ps
4643.722	Co	15	-	-	4640.443	Ne I	-	[70]	Ps	4636.915	In II	-	[10]	Ps
4643.695	Yt I	50	100	-	4640.431	Ti I	6	1	-	4636.765	Sm	2	-	-
4643.691	Er	50	15	-	4640.384	Al II	-	[18]	Sy	4636.744	Ce	2	-	-
4643.677	Cb	3	3 h	-	4640.362	Al II	-	[20]	Sy	4636.727	Pr	3	-	-
4643.66	Ca	-	4 h	Ad	4640.349	U	5	8	-	4636.655	Gd	25	12	-
4643.623	U	12	-	-	4640.303	W	10	2	-	4636.65	Se	-	[150]	Bt
4643.52	Br I	-	[25]	Ks	4640.206	Pr	20	-	-	4636.634	Ne I	-	[70]	IMe
4643.505	Pr	60 w	5 w	-	4640.20	Kr	-	[2 wh]	Me	4636.592	U	2 h	2 h	-
4643.475	Fe I	35	2	-	4640.172	Nd	8	-	-	4636.59	Tb	20	5	-
4643.461	Dy	3	-	-	4640.128	Zr I	3	-	-	4636.569	Nd	5	2	-
4643.311	Cb	3	3	-	4640.094	Hf II	12	20	-	4636.425	La II	10	20	-
4643.29	Lu	8 h	-	Me	4640.093	Ce	2	-	-	4636.384	Al II	-	[4]	Sy
4643.27	Tb	2 h	-	-	4640.083	Ir	40	2 wh	-	4636.345	Ti II	-	4 h	-
4643.19	Sb II	-	15	Dv	4640.066	V I	25	15	-	4636.333	Ba	20	-	Sz
4643.19	Er	2	-	m	4640.052	Th	10	5	-	4636.288	Nd	15	-	-
4643.184	Rh I	15	10	-	4640.047	Gd	10	5	-	4636.274	Sm	8	-	-
4643.182	Ne I	-	[5]	Ps	4639.947	Ti I	60	15	-	4636.26	Pr	4	3	-
4643.174	Ce	5	-	-	4639.877	Pr	5	-	-	4636.158	V I	4	-	-
4643.153	W	12	8 w	-	4639.833	Al II	-	[6]	Sy	4636.14	Kr I	-	[20]	Me
4643.124	La I	8	5 h	-	4639.73	Pt	2	-	-	4636.125	Ne I	-	[70]	IMe
4643.11	Tm	35	-	-	4639.725	Al II	-	[8]	Sy	4636.1	Li I	3	-	Fl
4643.106	N II	-	[100]	Fl	4639.715	Cr	10	2	-	4636.076	W	7	1	-
4643.079	Ce	2	-	-	4639.708	Th	10	6	-	4636.07	Tb	10 w	-	-
4642.94	Tm	25	-	-	4639.667	Ti I	40	15	-	4636.05	Ir	2	-	Me
4642.88	Ca	-	4 h	Ad	4639.593	Nd	5	-	-	4635.852	Fe I	12	1	-
4642.812	Mn	50	-	-	4639.591	Ne I	-	[30]	Ps	4635.802	Re	2	-	-
4642.79	Tb	3	-	-	4639.555	Pr	60	2	-	4635.7	Al II	-	[4]	Sy
4642.779	Dy	2	3 h	-	4639.377	Nd	10	-	-	4635.692	Pr	40	-	-
4642.77	Eu	15 w	-	-	4639.37	Rh I	4	2	m	4635.690	Ru I	125	-	-
4642.700	Mo	8	6	-	4639.366	Ti I	80	18	-	4635.539	Ti I	12	2	-
4642.63	Br	-	[4]	Bl	4639.358	Mo	3	3	-	4635.510	U	3	3	-
4642.603	Ru	7	-	-	4639.326	Al II	-	[2]	Sy	4635.444	Cr	5	-	-
4642.58	Tm	10	-	-	4639.318	Ru	12	-	-	4635.42	Kr II	-	[8]	Me
4642.564	W	30	8	-	4639.141	Nd	20	-	-	4635.39	Eu	6	-	Kn
4642.485	U	1	2 h	-	4639.14	Sm	3	-	-	4635.328	Fe II	2	-	-
4642.385	Ru	7	-	-	4639.12	Tb	2 h	-	-	4635.316	Dy	4	2	-
4642.29	Mn	12	-	-	4639.108	U	2	3	-	4635.177	V I	30	25	-
4642.29	Tm	5	-	-	4639.01	Gd	25	3	-	4635.101	W	7	1	-
4642.278	Ce	3 h	-	-	4638.970	Pr	2	-	-	4635.050	Pr	5	-	-
4642.241	Hf	15	4	-	4638.916	U	1	3	-	4635.011	Mo	5	5	-
4642.232	Sm II	100	40	-	4638.905	W	1	7	-	4634.971	La II	3	5	-
4642.212	Dy	2	-	-	4638.87	I	-	[8 h]	Bl	4634.870	Ti	8	2	-
4642.172	K I	5	-	Da	4638.865	O II	-	[70]	Fl	4634.867	I	-	[30]	Ke
4642.148	A I	-	[80]	Ms	4638.861	In	3	70	-	4634.810	W	20	7	-
4642.038	Ba	3	-	Sz	4638.812	Dy	5	4	-	4634.787	Dy	3	-	-
4642.03	Br	-	[20]	Bl	4638.753	Ce	2	-	-	4634.768	Os	30	-	-
4642.029	Pr	4 h	-	-	4638.712	Nd	15	3	-	4634.742	Ti	6	-	-
4642.02	I II	-	[3]	Mu	4638.65	Sm	3 w	-	-	4634.73	Ne II	-	[15]	Bn
4642.011	Cr	15	1	-	4638.625	Os	25	-	-	4634.72	Eu	4 W	-	-
4641.98	Tb	40	-	-	4638.599	Gd	8	-	-	4634.717	Pr	3	-	-
4641.831	Os	30	3 h	-	4638.522	Tb	3	-	-	4634.715	Cb	2	3	Me
4641.827	O II	-	[150]	Fl	4638.428	Ru I	10	-	-	4634.641	Zr I	3	-	-
4641.800	W	20	6 w	-	4638.360	Mo	2	2	-	4634.404	Re	4 h	-	-
4641.72	P	-	[50]	Gu	4638.345	Ce	2 h	-	-	4634.27	Er	2	1	m
4641.7	Ho	2	-	Kn	4638.30	Ho	2	1 h	Ex	4634.24	Tm	80	10	-
4641.658	U	10	15	-	4638.245	In II	-	[125]	Ps	4634.229	Nd	50	-	-
4641.585	K I	3	-	Da	4638.19	Ho	2	-	Ex	4634.214	Ca	-	2	-
4641.570	Mo	5	5	-	4638.172	Cb	-	2	-	4634.210	V	-	3 h	-
4641.520	Sm	2	-	-	4638.103	Cb	10 h	10 h	-	4634.13	Tb	2 h	-	-
4641.45	Tb	2 h	-	-	4638.100	In II	-	[200]	Ps	4634.089	Cr II	5	80 h	-
4641.415	Eu	20	-	Kn	4638.04	Tb	3	-	-	4634.026	Yb	2	10 h	-
4641.40	La II	-	2 h	Me	4638.018	Fe I	80	10	-	4634.012	Pr	2	-	-
4641.315	Gd	6	-	-	4637.974	In II	-	[20]	Ps	4633.985	Zr I	35	-	-
4641.29	Ra I	-	[40]	Rs	4637.940	U	8	10	-	4633.97	air	-	10	Sq
4641.19	Te	-	[70]	Bl	4637.93	Mo	-	10	-	4633.94	Tm	15	-	-
4641.102	Nd	80	-	-	4637.882	Ir	10	-	-	4633.88	Kr II	-	[800]	Me
4641.058	Ce	6	-	-	4637.876	Ti I	20	4	-	4633.856	Rh	2	-	-
4641.00	Tb	20	-	-	4637.85	Er	2	1	m	4633.835	Th	4	2	-
4640.985	Ru	10	-	-	4637.8	bh Zr	100	-	L	4633.681	Mo	4	4	-
4640.98	Br	-	[4]	Ks	4637.772	Cr	20	6	-	4633.599	Ce	2	-	-
4640.916	Mo	4	5	-	4637.745	Mo	5	3	-	4633.483	Ru	5	-	-
4640.88	I I	-	[50]	Bl	4637.571	Cb	-	20 h	-	4633.47	Pr	3	-	-
4640.875	Ce	3	-	-	4637.518	Fe I	100	10	-	4633.363	I II	-	[15]	Ke
4640.822	Pt I	15	-	-	4637.36	Au	-	2	-	4633.30	Xe II	-	[25]	Hu
4640.803	Co I	10	-	-	4637.31	Sb II	-	[10]	Lg	4633.286	Cr I	20	6	-

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
		Arc	Spk., [Dis.]			Arc	Spk., [Dis.]			Arc	Spk., [Dis.]
4633.2	Al II	-	[2]	4629.42	Br	-	[15]	4625.98	Re	40	-
4633.185	Yb	4	-	4629.378	Co I	600 W	5	4625.937	Rh I	2	-
4633.173	Os	6	-	4629.356	Os	2	-	4625.935	U	-	2
4633.171	Ru I	5	-	4629.342	Ti I	70	7	4625.925	Cr	8	6
4633.166	Sm II	2	-	4629.328	Fe II	7	8	4625.797	W	3	-
4633.104	Mo	25 h	25 h	4629.257	W	5	1	4625.780	Co I	200	-
4633.1	Eu	8 w	-	4629.252	Nd	3	-	4625.74	-	-	5
4633.09	Au	-	10	4629.19	Ta	5 w	3 h	4625.68	Tb	2 h	-
4633.087	Ce	2	-	4629.142	U	1	2	4625.616	Pr	5 h	-
4633.06	Se	-	[10]	4629.13	Dy	4 h	2	4625.572	Tm	3	-
4633.06	Ta	150	3 h	4629.10	Ho	6	4	4625.56	Er	3	2
4632.918	Fe I	70	4	4629.028	Os	2	-	4625.486	U	6	-
4632.913	Pr	4	-	4628.936	Co I	125	-	4625.48	Rn	-	[500]
4632.771	Sm	2	-	4628.85	Tb	2	-	4625.46	A I	-	[10]
4632.688	Nd	12	-	4628.794	Sm	2 h	-	4625.38	Mn	20	-
4632.67	As II	-	10	4628.751	Pr	200	50 w	4625.37	Se II	-	[8]
4632.67	Ca	-	4 h	4628.717	Mo	2	2	4625.30	Eu	50 w	-
4632.632	Pd I	3	-	4628.70	P II	-	[50]	4625.298	Pr	4	1
4632.58	Eu	3 w	-	4628.612	Os	10	-	4625.297	Cr	6	-
4632.564	Mo	5	5	4628.60	Tb	2 h	-	4625.295	Ce	2 h	-
4632.433	I II	-	[35]	4628.600	W	3	-	4625.173	W	5	1
4632.36	Er	2	-	4628.503	Nd	3 d	-	4625.14	Er	2	-
4632.322	Ce	8	-	4628.473	Cr I	15	-	4625.055	Fe I	100	12
4632.32	I	-	[50]	4628.47	Er	2	-	4625.04	Tb	2	-
4632.29	Tm	10	-	4628.460	Ne I	-	[30]	4625.02	Th	4	3
4632.280	Pr	40	1	4628.449	Mo	3	4	4624.959	Sm II	4 w	-
4632.180	Cr	25	8	4628.441	A I	-	[1000]	4624.9	Eu	4 w	-
4632.06	Tb	30	-	4628.414	Nd	3 d	-	4624.898	Ce	8	10
4631.918	Rb II	-	5	4628.333	Ru I	10	-	4624.78	Er	3	1
4631.828	Os	100	5	4628.332	Ba	40	4	4624.710	U	6	8
4631.798	U	1	4	4628.310	In II	-	[5]	4624.70	Tb	2	-
4631.762	Th	15	10	4628.309	Ne I	-	[150]	4624.580	Co I	10	-
4631.738	Ru I	3	-	4628.30	U	-	2	4624.575	Cr	15	6
4631.73	Tm	10	-	4628.22	Ho	2	-	4624.461	W	5	-
4631.71	Rn	-	[5]	4628.19	Hf	4	-	4624.44	Yb	6	-
4631.673	Pr	4	-	4628.182	In II	-	[10]	4624.438	Ru	7	-
4631.620	U	30	3	4628.161	Ce	20	20	4624.428	Gd	15	8
4631.614	Nd	5	-	4628.12	Se II	-	[25]	4624.42	Dy	3	2
4631.58	Er	2	1	4628.081	Dy	5	4	4624.406	V I	20	15
4631.549	Mo	5	5	4628.072	In II	-	[10]	4624.39	Tm	10	-
4631.506	Dy	4	2	4627.99	Th	10 h	-	4624.367	Ce	2	-
4631.5	Al II	-	[2]	4627.986	Nd	12	-	4624.33	Mn	8	-
4631.39	Ca	-	4 h	4627.80	As	-	200	4624.324	Ru	7	-
4631.379	Pd I	2 h	-	4627.799	Ne I, II	-	[20]	4624.276	Xe I	-	[1000]
4631.295	Nd	10	-	4627.784	In II	-	[5]	4624.240	Mo	25	25
4631.22	Si*	-	4	4627.744	Mn	50	-	4624.201	Ce	2	-
4631.12	Pt	2	-	4627.720	Zr I	3	-	4624.198	Nd	15	-
4631.040	Tb	2	-	4627.63	Gd	8	1	4624.142	Th	3	2
4630.967	Sm	3 w	-	4627.53	Tb	7	-	4624.137	Sm	2 h	-
4630.918	Mo	3	3	4627.475	Mo	80	80	4624.11	S	-	[20]
4630.885	Er	15	3	4627.475	Cb	2	3 h	4624.103	Dy	3	2
4630.839	Re	50	-	4627.385	In II	-	[150]	4624.048	Pr	8	-
4630.816	Ce	3 h	-	4627.372	Cr	5	-	4623.96	Cl I	-	[6]
4630.712	Pr	3	-	4627.347	La I	3	-	4623.889	Th	3	3
4630.706	Ru	4	-	4627.34	I II	-	[2]	4623.77	Se I, II	-	[150]
4630.610	Hf	12	-	4627.3	bh La	3 h	-	4623.687	W	12	3
4630.58	Er	2	-	4627.26	Er	2	-	4623.676	Mo	-	2
4630.57	Te	-	[50]	4627.225	Eu	50	15	4623.633	Pr	5	-
4630.569	Sm	2	-	4627.20	Dy	2	-	4623.58	Tb	2 h	-
4630.56	Se II	-	[12]	4627.122	Eu	[300 R]	-	4623.464	Mo	15	15
4630.551	N II	-	[300]	4627.097	Ir	20	-	4623.463	Ce	2	-
4630.52	C	-	2 d	4627.079	U	30	60	4623.433	U	5	8
4630.51	Gd	5	-	4627.05	Pr	15	3	4623.39	Eu	8 W	-
4630.457	Ru	7	-	4626.96	Tm	25	-	4623.331	Re	2 h	-
4630.44	Tb	2 h	-	4626.92	Tb	30	-	4623.33	Mn	8	-
4630.409	W	5	-	4626.855	Cr	10	-	4623.190	Pr	3	-
4630.301	Nd	20	-	4626.78	A I	-	[30]	4623.160	W	10	-
4630.24	Re	6	-	4626.60	P II	-	[70]	4623.094	Ti I	125	40
4630.211	Sm	40	-	4626.60	Er	2	-	4623.091	Cs II	-	[20]
4630.14	As II	-	200	4626.55	Tm	50	3	4623.070	Sb	-	20
4630.14	Hg	-	[30]	4626.544	Mn	80	15	4623.042	Co I	150	-
4630.128	Fe I	10	2	4626.497	Nd	10	-	4623.02	Er	2	-
4630.112	Cb	30	20	4626.485	V I	25	20	4622.959	Ta	50	1
4630.016	Mo	15	12	4626.466	Mo	100	80	4622.798	Mo	-	25
4629.903	Nd	10	-	4626.435	U	2	-	4622.761	Cr	20	10
4629.82	Eu	15 W	-	4626.42	Hf II	15	6	4622.75	Br	-	[200]
4629.82	Se II	-	[4]	4626.413	Zr I	12	-	4622.74	Mn	8	-
4629.814	Zn I	35	-	4626.359	W	4	-	4622.726	Pr	7	-
4629.772	Th	3	-	4626.31	Tb	9	-	4622.7	bh La	3	-
4629.721	U	3 h	5	4626.31	Tm	50	20	4622.7	P II	-	[50 h]
4629.7	Al II	-	[4]	4626.28	Er	2	1 w	4622.699	Hf II	20	60
4629.693	Ca	-	2	4626.21	Eu	6 W	-	4622.697	Co I	30	-
4629.675	Pr	6 w	-	4626.188	Cr I	100	125	4622.567	Mo	2	2
4629.455	Pr	2	-	4626.039	Ru	12	-	4622.53	Er	3	-
4629.431	Sm	10	-	4626.01	Dy	3	-	4622.491	Cr	30	30

4622.4—4612.2 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4622.447	Rb II	-	50	Rr	4618.933	Ce	2	-	-	4615.571	U	1	2	-
4622.427	U	12	18	-	4618.86	Tb	2 h	-	-	4615.57	Dy	3	4	-
4622.38	Dy	3	2	-	4618.85	C II	-	25 h	Fl	4615.570	In II	-	[5]	Ps
4622.311	Gd	4	-	Kn	4618.84	Ho	2	-	Kn	4615.50	Xe II	-	[100]	Hu
4622.26	Pr	7	1	-	4618.829	Cr II	6	80 h	-	4615.476	Mo	8	-	-
4622.214	Nd	3	-	-	4618.795	Ru	10	-	-	4615.446	Sm II	25	-	-
4622.187	Gd	4	-	Kn	4618.782	V I	4	3	-	4615.430	Ru	8	-	-
4622.135	Ir	2	-	Ab	4618.77	Se II	-	[100]	Bl	4615.4	bh B	40	-	L
4621.97	Tb	3	-	-	4618.765	Fe I	10	1	-	4615.39	Cd I	3	-	Ps
4621.963	Cr	50	40	-	4618.610	Ce	3	-	-	4615.362	Pr	9	1	-
4621.937	Nd	40	-	-	4618.485	V	-	3	-	4615.325	Ce	2	-	-
4621.93	Eu	2	-	-	4618.425	Cb	-	3 wh	-	4615.28	Kr II	-	[500]	Me
4621.893	Cr	20	-	-	4618.392	U	5	20	-	4615.195	Ce	6	1	m
4621.867	I	-	[35]	Ke	4618.36	Th	2	-	-	4615.07	Th	3	-	-
4621.71	Tm	15	-	-	4618.33	Er	2	-	m	4615.065	La I	10	2	-
4621.70	Ca	-	5 hs	Ad	4618.257	Pr	3	-	-	4615.06	Xe II	-	[50 hl]	Hu
4621.7	Eu	2	-	Kn	4618.235	Sm	2	-	-	4614.987	U	2	3	-
4621.58	Se II	-	[8]	Bl	4618.12	Tb	3 d	-	-	4614.930	Pr	3	-	-
4621.58	Er	2	-	m	4618.111	Nd	3	-	-	4614.92	Tb	3	-	-
4621.54	Tb	2 h	-	-	4618.067	Ce	2	-	-	4614.858	W	10	2	-
4621.427	Dy	3	2	-	4618.032	Nd	3	-	-	4614.83	Dy	3	2	-
4621.405	N II	-	[50]	Fl	4618.011	Pr	10	2	-	4614.751	Cr	12	1	-
4621.384	Re	30	-	-	4618.009	Ir	2 h	-	Ab	4614.748	Mo	10	12	-
4621.375	Mo	30	25	-	4617.949	Mo	12	12	-	4614.741	Cb	1	3 h	-
4621.341	Pr	7	-	-	4617.837	Ne I	-	[70]	IMe	4614.696	Re	50	-	-
4621.34	Eu	15 W	-	Kn	4617.82	Mn	3	-	-	4614.678	U	6	8	-
4621.27	Te	-	[15]	Bl	4617.73	Tb	2 h	-	-	4614.63	Eu	6	5	-
4621.190	Sm	3	-	-	4617.727	Pr	10	-	-	4614.60	Br I	-	[100 l]	Ks
4621.077	Cr	10 d	-	-	4617.69	Tm	10	12	-	4614.523	Cr	15	4	-
4621.04	Mn	5 h	-	-	4617.665	Ru I	12	-	-	4614.505	Gd	50	25	-
4620.98	Tm	10	-	-	4617.64	Er	2	-	Ed	4614.50	Kr II	-	[15]	Me
4620.97	I I	-	[15]	Db	4617.638	Mo	5	10	-	4614.46	Tm	35	15	-
4620.91	Tb	4	-	-	4617.613	Ir	3 h	-	Ab	4614.391	Ne I	-	[100]	IMe
4620.864	Hf	50	4	-	4617.573	Pr	2	-	-	4614.287	Ti I	7	1	-
4620.828	In II	-	[5]	Ps	4617.541	U	3	6	-	4614.206	Hf	10	-	-
4620.817	Co I	25	-	-	4617.50	Xe II	-	[50]	Hu	4614.173	Ir	10	-	Ab
4620.762	Sm II	3 h	-	-	4617.48	Th	8	-	-	4614.17	Cd I	4	-	Ps
4620.74	I	-	[15]	Bl	4617.368	Ir	5 h	-	Ab	4614.154	Cr	15	1	-
4620.70	Au I	4	-	MI	4617.326	Pr	2	-	-	4614.09	Tb	2 h	-	-
4620.667	In II	-	[5]	Ps	4617.30	As II	-	10	Ro	4614.009	Co I	60	-	-
4620.554	W	20	7	-	4617.28	Tb	3	-	-	4613.981	Th	2	-	-
4620.529	In II	-	[10]	Ps	4617.270	Ti I	200	100	I	4613.96	Tm	15	-	-
4620.48	Ag	3	4	-	4617.27	Dy	5	4	-	4613.960	Re	3	-	-
4620.470	Gd	-	3 h	-	4617.2	Ti I	5	-	Fl	4613.953	Zr II	4	4 h	-
4620.431	U	8	-	-	4617.159	In II	-	[200]	Ps	4613.95	Er	2	-	Ed
4620.413	In II	-	[15]	Ps	4617.121	Pr	5	-	-	4613.913	V I	2	2 h	Me
4620.40	Er	2	-	Ed	4617.074	Pt	2	-	-	4613.887	N II	-	[30]	Fl
4620.32	Se II	-	[8]	Bl	4617.033	U	-	2	-	4613.845	Nd	4	25 h	-
4620.32	Eu	4	-	Kn	4616.969	Ce	2	-	-	4613.83	Dy	3	-	-
4620.243	In II	-	[200]	Ps	4616.911	Ne I	-	[5]	Ps	4613.81	Pr	4	-	-
4620.219	U	25	12	-	4616.783	Os	150	6	-	4613.8	P	-	[30]	Gu
4620.21	Mn	5 h	-	-	4616.754	Ir	5 h	-	Ab	4613.79	Kr II	-	[2 h]	Me
4620.055	In II	-	[80]	Ps	4616.68	Nd	5	-	Ex	4613.738	Hf II	12	25 wh	-
4620.048	Ce	3	-	-	4616.665	Cr II	-	50	-	4613.503	Sm II	8	-	-
4620.04	Dy	8	4	-	4616.65	Th	2	-	-	4613.393	La II	100	100	-
4620.034	Ru	4	-	-	4616.618	Mo	15	15	-	4613.373	Cr I	150	60	-
4620.02	Ag	-	4 h	-	4616.613	Sm	2 h	-	-	4613.37	Ho	4	-	Kn
4619.99	Kr II	-	[5 h]	Me	4616.595	Re	20 w	-	-	4613.368	Zr	5 h	-	-
4619.978	Ba I	25	-	Sz	4616.585	In II	-	[10]	Ps	4613.316	W	50	10	-
4619.907	Rh	8	5	-	4616.49	Eu	30 w	-	-	4613.219	Fe I	30	2	-
4619.882	La II	150	200	-	4616.484	Sm II	3	-	-	4613.208	Mo	5	-	-
4619.846	Pr	3	-	-	4616.441	U	1	2	-	4613.19	Tm	15	20	-
4619.8	bh Zr	80	-	L	4616.43	Ga	-	2	Kl	4613.071	Mo	-	12	-
4619.771	V I	8	5	Me	4616.43	Tb	2	-	-	4613.023	Ce	6	-	-
4619.718	Mo	2	4	-	4616.388	Ir	200	5	-	4612.997	Yt I	3	2	-
4619.660	Pr	6	-	-	4616.28	Cs	-	[15]	Sv	4612.935	U	2	-	-
4619.646	V	6	5	-	4616.18	Br	-	[20]	Bl	4612.92	Sb II	-	[50]	Lg
4619.64	Tm	10	-	-	4616.176	In II	-	[20]	Ps	4612.89	Ne II	-	[5]	Bn
4619.63	Gd	3 h	-	Ed	4616.167	Cb	10	10	-	4612.83	P II	-	[30]	Gu
4619.63	As	-	10	Ro	4616.137	Cr I	300 r	200	-	4612.80	Tb	3	-	-
4619.62	Mn	3	-	-	4616.13	Cs II	-	[15]	Sv	4612.754	Pr	2	-	-
4619.60	Si	-	2	Sy	4616.107	Ru	6	-	-	4612.7	bh C	50	-	L
4619.57	Xe	-	[2]	Hu	4616.084	Ce	3	-	-	4612.609	Mo	-	10	-
4619.562	Th	3	3	-	4616.033	In II	-	[15]	Ps	4612.602	U	1	2	-
4619.551	Cr	50	30	-	4616.01	Cs	-	[10]	Sv	4612.553	Pr	4	-	-
4619.525	Ti I	12	2	-	4615.98	Ne II	-	[50]	Bn	4612.54	Th	4	3	-
4619.512	Ta	300	10	-	4615.93	Tm	200	300	-	4612.473	Nd	12	-	-
4619.472	Th	5	3	-	4615.925	In II	-	[15]	Ps	4612.451	Cb	2	3 h	-
4619.30	Mn	20	-	-	4615.91	Tb	10 h	-	-	4612.35	Eu	2	2	-
4619.298	Fe I	100	8	-	4615.91	Er	4	3	m	4612.325	Ru I	15	-	-
4619.17	Tb	5	-	-	4615.86	Ag	4 h	1 h	Kp	4612.275	Dy	50	10	-
4619.15	Kr II	-	[1000]	Me	4615.75	Cd	2	-	Ps	4612.27	Ho	3	-	Ex
4619.130	Gd	5	3	-	4615.689	Sm II	50	40	-	4612.26	Tb	15	-	-
4619.058	Tm	15	10	-	4615.688	Nd	30	5	-	4612.244	Ir	2	-	Ab
4619.03	Er	2	-	Ed	4615.65	Mn	8	-	-	4612.242	Mo	5	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4612.133	In	-	150	-	-	4609.20	Eu	2 w	-	-	-	4605.148	U	12	25	-	-
4612.122	Cb	3	3	-	-	4609.154	Zr I	3	-	-	-	4605.093	La I	5	2	-	-
4612.072	Pr	60	15	-	-	4609.13	Pr	6 d	-	-	-	4605.036	Os	15	-	-	-
4612.041	Cb	2 h	8 h	-	-	4609.06	Dy	2	2 h	m	-	4605.03	Th	2 h	-	-	-
4612.0	bh La	3	-	-	Me	4608.911	Co I	8	-	-	-	4604.994	Ni I	300	10 h	-	-
4611.976	Ce	3	-	-	-	4608.844	W	5	1 wh	-	-	4604.990	Ba	10	3	-	-
4611.968	Cr	15	4	-	-	4608.813	U	3	5	-	-	4604.938	Ne I	-	[5]	-	Ps
4611.955	Mo	5	-	-	-	4608.810	Re	3 h	-	-	-	4604.89	Pr	9	2	-	-
4611.94	Tb	9	-	-	-	4608.784	Er	2	-	-	-	4604.890	Er	4	-	-	-
4611.889	Xe II	-	[700]	I	-	4608.78	Tb	3 h	-	-	-	4604.863	Tm	5	-	-	-
4611.842	Th	10	6	-	-	4608.750	Ce	2	-	-	-	4604.86	Te	-	[15]	-	Bi
4611.80	Er	3	-	-	Ed	4608.709	Mo	10	10	-	-	4604.852	Ta	200 W	-	-	-
4611.776	Ir	2 wh	-	-	Ab	4608.675	Ru	6	-	-	-	4604.83	Eu	6	-	-	-
4611.739	V I	6	5	-	-	4608.67	Ho	3	1	Ex	-	4604.812	Sm	2	-	-	-
4611.71	Dy	2	2	-	-	4608.591	Gd	6	-	-	-	4604.800	Yt I	8	3	-	-
4611.673	Pr	2	-	-	-	4608.583	Cb	2	3 h	-	-	4604.77	Sb II	-	[30]	-	Lg
4611.669	Sm	4 r	-	-	-	4608.54	Ca	-	2	Ad	-	4604.713	Sc	4	-	-	-
4611.557	Ce	4	-	-	-	4608.492	Ce	6	-	-	-	4604.620	Cr	15	-	-	-
4611.52	Eu	50 w	-	-	Kn	4608.457	Cu II	-	2	Sh	-	4604.609	W	2	10	-	-
4611.436	U	12	25	-	-	4608.44	Tb	8 R	-	-	-	4604.475	Ir	10 h	-	-	-
4611.43	Mn	1	-	-	-	4608.425	K II	-	[40]	Dm	-	4604.421	Zr I	10	-	-	-
4611.289	Fe I	200	25	-	-	4608.341	U	2	-	-	-	4604.40	Rn	-	[200]	-	Wa
4611.27	Er	4	2	m	-	4608.280	Os	12	-	-	-	4604.35	Tb	9	-	-	-
4611.257	Sm	50	-	-	-	4608.15	Eu	2 w	-	m	-	4604.34	Se II	-	[300]	-	Bi
4611.25	A II	-	[5]	Rt	-	4608.119	Rh I	15	5	-	-	4604.32	Dy	2	-	-	-
4611.22	I II	-	[20]	Ke	-	4608.116	Mo	5	5	-	-	4604.239	La I	8	2	-	-
4611.154	Mo	20	15	-	-	4608.092	Hf	25	4	-	-	4604.234	Mo	-	20	-	-
4611.14	Tb	2	-	-	-	4608.02	Gd	8	3	-	-	4604.209	Ce	3	-	-	-
4611.045	Gd	4	4 h	-	-	4608.005	Pr	5	-	-	-	4604.205	Pr	3	-	-	-
4611.044	Cr	10	-	-	-	4608.0	Ho	2	-	-	Kn	4604.181	Sm II	60	-	-	-
4611.02	Mn	2	-	-	-	4607.97	Yt II	2 h	-	-	-	4604.10	Tb	10	-	-	-
4610.915	V I	5	4	-	-	4607.89	Er	2	-	-	Ed	4604.095	Ne I	-	[15]	-	Ps
4610.843	Mo	10	8	-	-	4607.887	Tm	2	-	-	-	4604.02	Kr II	-	[60 hl]	-	Me
4610.71	Tb	2	-	-	-	4607.81	Tb	4	-	-	-	4603.987	Sm	2 h	-	-	-
4610.686	Cb	2	3	-	-	4607.654	Fe I	50	5	-	-	4603.85	I	-	[8]	-	Bi
4610.65	Kr II	-	[60 hl]	Me	-	4607.625	Mn	50	-	-	-	4603.836	Ir	2	-	-	-
4610.62	Pr	10	-	-	-	4607.50	Au	-	15 r	-	-	4603.823	Nd	25	-	-	-
4610.509	Nd	5	-	-	-	4607.46	As	-	200	Ro	-	4603.810	Pr	10	2	-	-
4610.505	Cs	-	[10]	Sv	-	4607.381	Nd	25	-	-	-	4603.801	Cb	2	3	-	-
4610.502	Ru	7	-	-	-	4607.34	Au I	30	15	-	-	4603.755	Cs II	-	[60]	-	Ot
4610.481	Mo	-	8	-	-	4607.331	Sr I	1000 R	50 R	IHz	-	4603.73	Er	3	1	m	-
4610.474	Ce	6	-	-	-	4607.33	Co	2 h	-	-	Dn	4603.7	bh Yt	5	-	-	Me
4610.419	Sc I	5	3	-	-	4607.3	bh La	3	-	-	Me	4603.665	U	25	40	-	-
4610.34	Tb	3	-	-	-	4607.290	Ce	3	-	-	-	4603.560	Mo	6	6 h	-	-
4610.3	bh Zr	4	-	-	L	4607.226	V	4	3	Me	-	4603.478	Pr	4	-	-	-
4610.3	Lu	10	-	-	Kn	4607.167	N II	-	[50]	Fl	-	4603.42	Tm	35	25	-	-
4610.26	Er	2	-	-	Ed	4607.087	Ce	2	-	-	-	4603.21	Tm	10	-	-	-
4610.186	Pr	3	-	-	-	4607.075	Mo	8	10	-	-	4603.116	Sm	5	-	-	-
4610.14	O II	-	[15 h]	Fl	-	4606.920	Pr	3	-	-	-	4603.028	Xe II	-	[300 h]	-	IMe
4610.109	Zr I	4	-	-	-	4606.833	Ru	4	-	-	-	4602.95	Tb	8	-	-	-
4609.951	Sc I	10	8	-	-	4606.8	bh So	10	-	-	Me	4602.946	V I	7	6	-	-
4609.94	Tb	3	-	-	-	4606.768	W	2	-	-	-	4602.944	Fe I	300	100	S	-
4609.931	Mn	20	-	-	-	4606.766	Cb	50	50	-	-	4602.944	Gd	10	2	-	-
4609.915	W	50	10	-	-	4606.723	Ti	4	-	-	-	4602.884	Th	5	3	-	-
4609.910	Ne I	-	[150]	IMe	-	4606.650	Gd	3	3	-	-	4602.863	Li I	800	-	-	Da
4609.894	Cr	15	3	-	-	4606.613	Er	20	1	-	-	4602.860	Cb	2	5	-	-
4609.879	Mo	40	-	-	-	4606.60	Hg	-	[5]	Ps	-	4602.808	Ru I	15	-	-	-
4609.876	Th	-	40	-	-	4606.520	Sm II	40	3	-	-	4602.752	Ce	4	-	-	-
4609.874	Nd	25	-	-	-	4606.511	Mo	4	3	-	-	4602.73	As II	-	200	-	Ro
4609.864	U	15	20	-	-	4606.506	Th	4	2	-	-	4602.713	Hf	6	3	-	-
4609.827	Zr I	3	-	-	-	4606.446	Pr	30 w	3 w	-	-	4602.7	bh La	3	-	-	Me
4609.809	Nd	12	-	-	-	4606.401	Ce	12	15	-	-	4602.63	Eu	15 w	-	-	Kn
4609.72	Kr II	-	[20 hs]	Me	-	4606.375	Cr	15	3	-	-	4602.60	Lu	3 h	-	-	Me
4609.72	Hg	-	[10]	Ps	-	4606.231	Ni I	100	-	-	-	4602.573	Zr I	12	-	-	-
4609.7	Al II	-	[4]	Sy	-	4606.2	bh Sr	2	-	-	L	4602.562	Pr	10	-	-	-
4609.656	Ce	2	-	-	-	4606.151	V I	30	25	-	-	4602.503	Tb	4	-	-	-
4609.649	V I	10	9	-	-	4606.1	bh C	-	-	-	L	4602.37	Te	-	[800]	-	Bi
4609.61	Pr	5 d	-	-	-	4606.056	Gd	5	2	-	-	4602.242	Nd	10	-	-	-
4609.60	A II	-	[300]	Rt	-	4606.048	Dy	4	-	-	-	4602.192	Ta	100	2	-	-
4609.60	N II	-	[30]	Fl	-	4605.84	Eu	8	-	m	-	4602.08	O II	-	[10 h]	-	Mh
4609.584	Nd	3	-	-	-	4605.829	Nd	4 h	-	-	-	4602.06	Er	2	1	-	-
4609.527	Sc	10	5	-	-	4605.816	Cr	30	-	-	-	4602.046	La I	20	-	-	-
4609.52	Ho	6	-	-	Kn	4605.782	La II	100	100	-	-	4602.025	Sm	2	-	-	-
4609.5	Rb	-	[15]	Dr	-	4605.774	Hf II	20	30	-	-	4602.010	Fe I	20	2	-	-
4609.43	Er	3	-	-	Ed	4605.734	Re	50	-	-	-	4601.96	P II	-	[300 w]	-	Gu
4609.39	O II	-	[60 h]	Mh	-	4605.665	Ru I	15	-	-	-	4601.794	U	4	-	-	-
4609.38	Rn I	-	[250]	Rs	-	4605.66	Br	-	[10]	-	Bi	4601.763	Ru I	20	-	-	-
4609.377	Th	6	4	-	-	4605.480	Ce	4	-	-	-	4601.65	La II	-	3	-	Me
4609.370	Ti	15	2 h	-	-	4605.43	Pb	-	2	Sx	-	4601.636	Rh I	3	2	-	-
4609.365	Ne I	-	[30]	Ps	-	4605.42	Tb	2	-	-	-	4601.568	Ce	2	-	-	-
4609.34	Tm	5	-	-	-	4605.39	Lu	10 h	-	-	Me	4601.490	N II	-	[100]	-	Fl
4609.32	Ho	4	2 h	-	Ex	4605.363	Mn	150	15	-	-	4601.430	Zr	2	-	-	-
4609.293	Zr I	3	-	-	-	4605.350	V	-	8	-	Me	4601.416	Ta	60	100 wh	-	-
4609.238	Ce	2	-	-	-	4605.22	Tm	10	-	-	-	4601.371	Ce	4	-	-	-
4609.230	Nd	5 d	-	-	-	4605.214	Pr	5	-	-	-	4601.36	Br	-	[20]	-	Bi

4601.2—4590.5 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4601.28	Yt I	2	-	-	4597.50	Dy	2	2	-	4593.932	Ce	30	30	-
4601.27	Tm	25	-	-	4597.4	Ca	-	4 wh	m Ad	4593.926	Pr	30	2	-
4601.19	Eu	12 W	-	m	4597.33	Eu	40 W	-	-	4593.9	bh La	5	-	Me
4601.165	Co I	30	-	-	4597.33	Re	2 h	-	-	4593.831	Cr	12	-	-
4601.130	U	18	25	-	4597.25	Yb	-	2	-	4593.785	Cb	-	15 h	-
4601.10	Er	4	-	Ed	4597.20	Tm	15	-	-	4593.716	Ce	2	-	-
4601.075	Pr	3	-	-	4597.170	Ce	4	-	-	4593.70	Xe II	-	[5]	Hu
4601.05	Gd	40	6	-	4597.160	Os	100	4	-	4593.698	In	-	20 h	-
4601.021	Cr	10	4	-	4597.08	Sb II	-	6	Dv	4593.643	Mo	8	8	-
4601.019	Ce	2	-	-	4597.013	Nd	25	2	-	4593.642	Th	-	50 wh	-
4601.00	Cl I	-	[20]	Ks	4596.994	Gd	25	25	-	4593.571	Pr	8 d	2 d	-
4600.881	Mo	3	3	-	4596.948	Pr	20	4	-	4593.531	Sm II	50	50	-
4600.752	Cr I	150	150	-	4596.933	Th	4 w	-	-	4593.44	A II	-	[2]	Rt
4600.744	U	2	5	-	4596.933	Ce	2	-	-	4593.407	Sm	2	-	-
4600.69	Kr	-	[2]	Ma	4596.927	Cr	6	-	-	4593.37	Yb	4	-	-
4600.68	Dy	2	2	-	4596.905	Co I	400	-	-	4593.30	Br	-	[4]	Bl
4600.59	La II	-	5 h	Ma	4596.903	Cu II	-	4 wh	Sh	4593.290	Th	3	2	-
4600.567	Tm	2	-	-	4596.90	Sb II	-	[70]	Lg	4593.243	Xe I	-	[50]	Ps
4600.555	Ru	6	-	-	4596.89	Tb	3	-	-	4593.213	Ru I	7	-	-
4600.522	Nd	10	-	-	4596.89	Br	-	[10]	Bl	4593.177	Cs I	1000 R	50 R	Sv
4600.442	W	20	4	-	4596.81	Kr	-	[2]	Me	4593.103	Ce	3	-	-
4600.40	Ca	-	3 h	Ad	4596.747	Sm	20	-	-	4593.06	Tb	3	-	-
4600.391	Pr	20	3	-	4596.73	I, II	-	[25]	Bl	4593.025	Ru	6	-	-
4600.372	Ni I	200	-	-	4596.73	Er	4	-	-	4592.939	Sc I	2	-	-
4600.236	Ce	3	-	-	4596.710	Ru	20	-	-	4592.933	U	3	-	-
4600.206	Cb	10	15	-	4596.62	Tm	25	-	-	4592.93	Er	3	-	Ed
4600.161	Tb	5	-	-	4596.59	Se II	-	[8]	Bl	4592.80	Kr II	-	[150 whl]	Me
4600.16	Ne II	-	[5]	Bl	4596.541	Yt I	10	5	-	4592.655	Fe I	200	50	S
4600.155	V	1	60 h	-	4596.47	Tb	3	-	-	4592.575	U	15	5	-
4600.104	Cr	20	50	-	4596.42	Ir	4	-	-	4592.557	U	1	3	-
4599.961	W	50	10	-	4596.380	Cr	10	-	-	4592.55	Re	2 h	-	-
4599.96	Se II	-	[70]	Bl	4596.380	Mn	10	-	-	4592.537	Cr	25	1	-
4599.865	U	-	2	-	4596.36	V	-	3 h	-	4592.529	Ni I	200	2	-
4599.86	Dy	3	2	-	4596.198	La I	4	2	-	4592.520	Ru I	100	-	-
4599.806	I	-	[30]	Ke	4596.167	Ce	2	-	-	4592.49	Te	-	[30]	Bl
4599.751	Ba	50	10	Sz	4596.13	O II	-	[150]	Mh	4592.422	W	20	10	-
4599.68	Sb	-	10 h	Sp	4596.097	A I	-	[1000]	I	4592.391	Tb	5	-	-
4599.607	Tb	4	-	-	4596.096	Sb	-	2	Sp	4592.39	Eu	4 w	-	-
4599.48	Pr	3	-	-	4596.07	Tb	3	-	-	4592.34	Se II	-	[8]	Bt
4599.476	Cb	3 h	10	-	4596.062	Fe I	10	2	-	4592.271	Ce	3	-	-
4599.469	U	-	3	-	4595.98	P II	-	[30]	Gu	4592.209	Mo	20	20	-
4599.44	Hf II	10	25	-	4595.951	Ni I	15	-	-	4592.153	Pr	8	2	-
4599.367	Th	3	-	-	4595.87	Pr	6	3 h	-	4592.058	Cr II	3	35 h	-
4599.342	Nd	3	-	-	4595.695	U	1	4 h	-	4592.05	Xe II	-	[150 whl]	Hu
4599.304	Ce	2	-	-	4595.627	Ce	2	-	-	4592.015	Ru	6	-	-
4599.231	Ti	35	3	-	4595.613	K II	-	[40]	Dm	4591.923	Pr	4	-	-
4599.22	Cs	-	[15]	Bs	4595.590	Cr	50	60	-	4591.880	Sb	-	20	-
4599.19	Eu	6 W	-	Kn	4595.579	U	2	-	-	4591.829	Ba	15	3	-
4599.157	Mo	25	20	-	4595.571	Rh	2	1 h	-	4591.826	Sm II	100	-	-
4599.09	Sb II	-	[40]	Lg	4595.53	P	-	[10]	Gu	4591.78	Dy	3	3	-
4599.085	Ru I	100	-	-	4595.424	Th	4	2	-	4591.730	U	3	8	-
4599.023	Ce	3	-	-	4595.368	Gd	4	1	-	4591.70	Mn	8	-	-
4599.003	Cr	10	-	-	4595.365	Fe	15	2	-	4591.677	Re	25	-	-
4599.00	Tm	80	-	-	4595.300	Sm II	100	60	-	4591.577	Ce	2	-	-
4598.951	Pr	10	-	-	4595.25	Tb	2	-	-	4591.57	Tb	12	-	-
4598.905	Gd	20	10	-	4595.249	Re	2 h	-	-	4591.560	Ru I	20	-	-
4598.800	Hf	20	3	-	4595.249	Ne I	-	[50]	Ps	4591.555	Pr	3	-	-
4598.77	A II	-	[20]	Rt	4595.159	Mo	40	40	-	4591.53	Tm	10	-	-
4598.743	Pr	4	-	-	4595.14	Dy	4	2	-	4591.513	Mn	10	-	-
4598.590	Ce	2	-	-	4595.126	U	1	2	-	4591.459	Ce	3	-	-
4598.49	Kr II	-	[50 hl]	Me	4595.053	La II	3	-	-	4591.394	Cr II	200	125	-
4598.441	Cr	20	4	-	4595.04	Cr	15	-	-	4591.225	V I	30	25	-
4598.436	Sc I	2 h	-	-	4595.040	Os	80	4	-	4591.18	Tb	6	-	-
4598.432	Nd	4	-	-	4594.963	Pr	3	-	-	4591.13	Ir	3	-	-
4598.37	Yb	25	70	-	4594.93	Sb II	-	[20]	Lg	4591.119	Ce	8	-	-
4598.365	Sm II	5	-	-	4594.92	Tb	2 h	-	-	4591.103	Ru I	60	-	-
4598.340	U	2	3	-	4594.908	Ni	15	10 h	-	4591.07	Eu	4	-	m
4598.246	Mo	15	15	-	4594.852	U	2	1	-	4591.05	S	-	[35]	Hn
4598.2	bh La	4	-	Me	4594.675	Nd	41	-	-	4591.02	As	-	30	Ro
4598.14	Re	2 h	-	m	4594.633	Co I	400	-	-	4590.95	I II	-	[25]	Mu
4598.135	Se	2	-	-	4594.577	Sm	2	-	-	4590.946	Os	8	1 h	-
4598.135	Fe I	50	4	-	4594.572	Pr	3	-	-	4590.94	O II	-	[300]	Mh
4598.130	Er	2	1	-	4594.447	Nd	10	-	-	4590.932	Pr	8	10 h	-
4597.967	U	2	-	-	4594.403	Cr	10	-	-	4590.91	Ir	5	-	-
4597.936	Cu II	-	2	-	4594.31	Tb	2	-	-	4590.83	Yb	40	-	-
4597.93	Se II	-	[25]	Bl	4594.294	U	6	8	-	4590.83	U	-	4 h	-
4597.922	Gd	25	40	-	4594.21	Sb II	-	[15]	Lg	4590.812	Th	3 h	-	-
4597.904	Hf	8	2	-	4594.129	Ce	4	-	-	4590.79	Yt	2	-	m
4597.882	Mo	15	20	-	4594.108	Mn	12	-	-	4590.77	Er	4	1	m
4597.863	Os	8	-	-	4594.108	V I	30 wh	25 wh	-	4590.739	Ce	2	-	-
4597.792	Ce	3	-	-	4594.02	Eu	500 R	200	-	4590.705	Pr	4	-	-
4597.73	Tb	3	-	-	4594.01	Er	2	-	m	4590.571	Dy	3	-	-
4597.72	Hg	-	[20]	Ps	4594.00	Yt	3	-	m	4590.558	Re	2 h	-	-
4597.673	Cs II	-	[10]	Ot	4593.947	Tb	4	-	-	4590.548	Zr I	8	-	-
4597.547	U	2 h	8 h	-	4593.936	Nd	2 h	-	-	4590.505	Nd	3	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4590.486	V	-	8	-	4586.967	Nd	10	-	-	4583.07	Tb	3	-	-
4590.380	Mo	15 wh	10 wh	-	4586.954	Cu I	250 w	80 w	Hs	4583.054	Dy	3	2	-
4590.3	Rb	-	[8]	Da	4586.939	Co I	15	-	-	4583.050	Mn	8	-	-
4590.281	U	2	2	-	4586.93	Lu	2	-	Me	4582.980	Ne I	-	[5]	Ps
4590.159	Zr I	3	-	-	4586.923	U	-	2	-	4582.86	Tb	3	-	-
4590.15	Tb	2 h	-	-	4586.848	Er	3	-	-	4582.85	Kr II	-	[300 hl]	Me
4590.145	Pr	3	-	-	4586.846	W	30	5	-	4582.835	Fe II	1	1	-
4590.010	U	1	5	-	4586.84	Sb II	-	[25]	Lg	4582.805	Mn	20	-	-
4589.978	Pd I	6	3 h	-	4586.82	Ca	-	2	Ad	4582.771	Th	2	-	-
4589.954	Ti II	40	100	-	4586.789	Mo	15	15	-	4582.747	Xe I	-	[300]	IMe
4589.935	Cr II	-	4 h	-	4586.642	Dy	4	2	-	4582.571	Pr	5 w	-	-
4589.93	A II	-	[150]	Rt	4586.632	Th	2	3	-	4582.56	Tb	2	-	-
4589.924	Ce	2	-	-	4586.614	Nd	50	-	-	4582.556	Ne I	-	[15]	Ps
4589.91	Hg	4	-	Ps	4586.610	A I	-	[10]	Ms	4582.51	Gd	10	3	-
4589.902	La I	4	-	-	4586.58	I II	-	[8]	Ke	4582.502	Ce	10	8	-
4589.89	O I	-	[30]	Ps	4586.574	Mo	15	15	-	4582.50	As	-	3	Ro
4589.832	Ti	2	-	-	4586.532	Pr	5 w	-	-	4582.498	Mo	10	10	-
4589.78	P II	-	[300 w]	Gu	4586.44	Eu	30 w	-	-	4582.451	Cr	8	-	-
4589.76	Pr	5 d	-	-	4586.357	V I	40 h	30 h	-	4582.450	Ne I	-	[150]	IMe
4589.759	Ba	10	3	-	4586.35	Tm	10	-	-	4582.39	Cl II	-	[2]	Mu
4589.750	Al II	-	[20]	Sy	4586.248	Hf II	8	10	-	4582.385	Ce	5	-	-
4589.689	Al II	-	[4]	Sy	4586.215	Dy	2	2	-	4582.382	Gd	6	2	-
4589.670	Th	4	2	-	4586.16	Pr	2	-	-	4582.370	U	4	4	-
4589.585	Ru	7	-	-	4586.138	Cr	25	6	-	4582.36	Yb	80	6	-
4589.542	Gd	3	3	-	4586.108	Mn	30 l	-	-	4582.346	Mo	10	10	-
4589.5	bh La	5	-	Me	4586.061	Mo	20	20	-	4582.34	Pb II	-	[10]	Gs
4589.419	Sm	2	-	-	4586.054	Re	2 w	-	-	4582.292	Zr I	8	-	-
4589.4	bh La	2	-	Me	4586.051	Ce	2	-	-	4582.286	Cb	5	5	-
4589.40	Ho	3	1	Ex	4586.03	Ca	2	3 h	Ad	4582.17	Yt I	2	2	m
4589.388	Ce	2	-	-	4585.94	Pr	4	-	-	4582.105	Ne I	-	[15]	Ps
4589.376	Dy	70	15	-	4585.89	Eu	2 w	-	Kn	4582.065	Cr	5	-	-
4589.36	To	15	-	-	4585.876	Ne I	-	[10]	Ps	4582.035	Ne I	-	[150]	IMe
4589.338	Mo	5 wh	3 wh	-	4585.871	Ca I	125	10	IWg	4581.92	Ir	20 h	-	-
4589.30	Er	3	2	m	4585.87	Tb	2	-	-	4581.833	Mn	125	-	-
4589.292	U	2	6 h	-	4585.820	Al II	-	[40]	Sy	4581.766	Yt I	3	-	-
4589.288	A I	-	[80]	IMe	4585.72	Dy	3	-	-	4581.76	P II	-	[30 h]	Gu
4589.22	Yb	35	1	-	4585.67	Eu	8 w	5	-	4581.737	Sm	40	-	-
4589.171	Ce	3	-	-	4585.64	Sn	-	25 wh	-	4581.724	U	8	18	-
4589.16	Pr	5	-	-	4585.59	Ir	8	-	-	4581.70	Er	7	-	m
4589.119	Th	4	4	-	4585.588	U	2	2	-	4581.619	Cb	30	50	-
4589.021	Cb	-	8 h	-	4585.51	Tb	2 h	-	-	4581.597	Co I	1000 w	10	-
4589.008	Cr	10	-	-	4585.5	bh Sr	3	-	L	4581.584	Sm	8	-	-
4588.98	O I	-	[15 d]	Ps	4585.48	Xe II	-	[200 whl]	Hu	4581.584	Pr	10 w	-	-
4588.96	Eu	8 w	-	Kn	4585.13	Ir	2	-	-	4581.581	Th	6	6	-
4588.9	Ca	-	4 wh	Ad	4585.1	bh La	4	-	Me	4581.522	Fe I	60	2	-
4588.8	bh B	25	-	L	4585.088	Cr	10	2	-	4581.46	Dy	2	2	m
4588.77	Br	-	[4]	Bl	4585.03	Cl II	-	[15]	Ks	4581.43	Tb	8	-	-
4588.750	W	40	15	-	4584.958	A I	-	[10]	Ms	4581.402	Ca I	100	10	IWg
4588.72	Tb	3	-	-	4584.937	Os	2	-	-	4581.302	Yt I	3	-	-
4588.699	Co I	100	1	-	4584.934	Cr I	10	1	-	4581.301	Gd	30	4	-
4588.660	U	4	-	-	4584.921	Mn	20	-	-	4581.3	Pb II	-	[4]	Ea
4588.591	Os	2	-	-	4584.855	Er	8	-	-	4581.229	V I	5	4	-
4588.431	Th	4	1	-	4584.848	Cb	3	3 h	-	4581.225	Th	3	3	-
4588.440	U	1	2	-	4584.847	U	10	15	-	4581.210	La I	15	5	-
4588.418	Ce	6	-	-	4584.84	Tb	12	-	-	4581.202	Gd	3	-	-
4588.36	Xe	-	[2]	Hu	4584.834	Sm II	60	50	-	4581.09	Nd	5	-	-
4588.238	Th	4	4	-	4584.824	Fe I	8	1	-	4581.088	Ce	4	1	-
4588.217	Cr II	10	600 h	-	4584.78	Dy	3	2	m	4581.070	Er	2	-	-
4588.194	Al II	-	[30]	Sy	4584.75	Ir	3	-	-	4581.063	Cr	15	1	-
4588.15	Tb	8 d	-	-	4584.450	Mo	3	3	-	4581.058	U	2	3	-
4588.147	Mo	25	30	-	4584.445	Ru I	150 R	80	-	4580.965	Mo	-	20 h	-
4588.14	Er	3	-	m	4584.427	Pr	2	-	-	4580.92	As	-	10	Ro
4588.13	Ne II	-	[30]	Bn	4584.376	Th	5	4	-	4580.827	U	2	4	-
4588.082	Al II	-	[2]	Sy	4584.282	Gd	3	2	-	4580.821	Pr	4 w	-	-
4588.06	Tm	5	-	-	4584.28	Cl II	-	[20]	Ks	4580.8	bh La	3	-	Me
4588.00	Pr	5 d	-	-	4584.26	U	-	3	-	4580.76	Eu	6 w	-	Kn
4587.931	Dy	6	3	-	4584.249	W	3	-	-	4580.73	Yb	2	-	-
4587.90	A	-	[2]	Rt	4584.243	Zr I	5	-	-	4580.70	Xe II	-	[40 wh]	Hu
4587.90	P II	-	[300 w]	Gu	4584.183	Ce	2 h	-	-	4580.69	Ta	200 W	10	-
4587.89	Au	-	15	-	4584.10	Cb	-	3 h	Me	4580.668	Re	30	-	-
4587.866	Cr I	30	-	-	4584.095	Cr	20	1	-	4580.668	Pt I	3	1	-
4587.715	Tb	20	-	-	4584.043	Nd	12	2	-	4580.619	Ni I	5	-	-
4587.473	Ir	5	-	Ab	4583.95	Tb	4	-	-	4580.600	Fe I	6	-	-
4587.409	Ir	20	-	-	4583.897	Cr I	10	-	-	4580.546	Pt I	3	1	-
4587.400	Mo	5	5	-	4583.881	Co	2	-	-	4580.50	Cb	1	2	Me
4587.266	U	6 h	-	-	4583.848	Fe II	150	150	-	4580.460	Pr	3	-	-
4587.21	A I	-	[5]	Ms	4583.783	V I	15	12	Me	4580.458	Ti II	-	5	-
4587.136	Fe	12	2	-	4583.698	Th	2	-	-	4580.401	V I	30 h	25 h	-
4587.135	Pr	8	-	-	4583.644	Dy	2	-	-	4580.40	Tb	4	-	-
4587.135	Re	15	-	-	4583.49	Cb	2	3 wh	Me	4580.35	Ne II	-	[30]	Bn
4587.130	La II	3 h	-	-	4583.443	Ti II	5	10	-	4580.27	Sn II	-	[4]	-
4587.099	Ru I	10	-	-	4583.274	U	8	10	-	4580.20	Eu	5 w	5	-
4586.982	Pr	6	-	-	4583.17	Ta	150	10	m	4580.185	Sm	3	-	-
4586.98	Te	-	[15]	Bl	4583.096	Ce	5	-	-	4580.140	Co I	300	3	-
4586.98	Gd	15	2	-	4583.087	Gd	40	2	-	4580.11	Kr II	-	[2 h]	Me

4580.0—4570.6 A.

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R	
4580.072	Ru I	25	-	4576.605	Dy	5	2	4573.41	Br	-	[8]
4580.057	La II	80	100	4576.60	Xe	-	[15]	4573.33	Kr II	-	[30 hl]
4580.056	Cr I	300	125	4576.58	I II	-	[25]	4573.293	Ta	200	2 h
4580.05	Tb	3	-	4576.57	Ca	-	4 h	4573.281	Pr	4	1
4579.992	I	-	[30]	4576.551	Ti I	4	-	4573.276	U	5	8
4579.962	W	4	-	4576.501	Mo	40	40	4573.18	Tb	7	-
4579.95	Br	-	[25]	4576.481	Ce	6	-	4573.1	Be	-	40
4579.928	Ce	2	-	4576.36	Eu	12 W	10	4573.075	Cb	30	50
4579.845	Pr	3	-	4576.331	Fe II	3	2	4573.066	Ne I	-	[5]
4579.81	Eu	3	-	4576.320	Pr	50	15	4572.993	U	4	6
4579.715	Mo	5	4	4576.319	Ru	6	-	4572.98	Er	3 w	1
4579.701	W	12	3	4576.202	Zr I	5	-	4572.953	Os	5	-
4579.669	Mn	50	-	4576.20	Yb	90	10	4572.904	In II	-	[10]
4579.667	Ba	75	40	4576.096	In	-	3 h	4572.851	Zr I	3 wh	6
4579.639	U	12	15	4576.009	U	-	4	4572.789	Ce	6	-
4579.63	Dy	2	-	4575.912	Gd	4	1	4572.74	Mn	20	-
4579.619	Cr	5	-	4575.863	Mo	15	15	4572.671	Be I	15	15
4579.606	Gd	15	4	4575.858	Ne I	-	[20]	4572.641	Rh I	4	2
4579.453	Cb	5 h	30 h	4575.84	Gd	3	-	4572.617	Th	4 w	-
4579.39	A	-	[80]	4575.783	Eu	20	-	4572.611	Cs	-	[10]
4579.364	Co I	25	-	4575.767	Ce	2	-	4572.52	Tb	3	-
4579.345	Ir	8 h	-	4575.751	Ru	7	-	4572.51	Er	2	-
4579.32	In	-	10	4575.75	Br I	-	[100 I]	4572.5	Eu	3 W	-
4579.311	Nd	25	3	4575.59	Te	-	[30]	4572.43	Ho	2	1
4579.286	Th	2	3	4575.519	Ti	7	1	4572.42	Tm	10	6
4579.277	Ce	6	-	4575.515	Zr I	50	-	4572.39	Mn	5	-
4579.192	V I	12	10	4575.427	Th	4	3	4572.35	Cl II	-	[2]
4579.158	Nd	2 h	2	4575.42	Tb	3	-	4572.30	Pr	3	-
4579.15	Pb II	-	[10]	4575.410	Mn	50	-	4572.277	Ce	35 s	35
4579.13	Sn II	-	[4]	4575.369	Cb	2	3	4572.26	Tb	3	-
4579.046	Sm	4	-	4575.246	Th	2	1	4572.243	U	6	8
4579.041	Os	15	-	4575.22	Eu	15 W	-	4572.215	Gd	8	8
4578.966	U	2	10	4575.169	Mo	5	8	4572.189	Re	2	-
4578.882	Nd	30	2	4575.121	Cr	25	5	4572.162	Rb II	-	3
4578.86	Yt I	3	2	4575.08	Er	2	-	4572.13	Cl II	-	[100]
4578.809	Th	3 w	-	4575.076	Ce	2	-	4572.129	Pr	10	-
4578.80	Tm	10	-	4575.060	Ne I	-	[300]	4572.11	Ca	-	8 h
4578.783	Mo	-	12 h	4575.026	U	2	-	4572.013	Ce	3	-
4578.778	Ce	6	-	4574.940	Co I	20	-	4571.978	Ti II	150	300
4578.730	V I	25	20	4574.906	Pr	4	-	4571.948	Th	3	-
4578.71	Pr	3	-	4574.90	P	-	[30]	4571.898	W	10	1
4578.705	Sm	4	-	4574.88	Eu	2 w	-	4571.89	Tm	15	-
4578.69	Tb	70	-	4574.875	La II	300	300	4571.88	Er	2	-
4578.60	Eu	5 w	-	4574.840	Cb	10	10	4571.85	Xe	-	[15 Wh]
4578.558	Ca I	80	5	4574.80	As	-	3	4571.790	Rb II	-	30
4578.526	In II	-	[5]	4574.793	U	-	2	4571.786	Cs II	-	[15]
4578.483	Mo	6	-	4574.746	Ce	3	-	4571.783	V I	30	25
4578.393	In II	-	[60]	4574.736	Sm	2	-	4571.759	Mo	6 wh	6 wh
4578.336	W	12	4	4574.722	Fe I	12	1	4571.72	Pb I	-	7
4578.334	Cr	25	2	4574.66	Si	-	20	4571.683	U	3	1
4578.257	U	3	6	4574.636	Pr	4	-	4571.676	Cr	50	40
4578.244	Re	2	-	4574.608	Mo	10	8	4571.613	Pr	20	5
4578.20	Tb	3	-	4574.6	Ti I	2	-	4571.55	Mn	8	-
4578.18	Cl I	-	[2]	4574.522	Mn	8	-	4571.51	I II	-	[10]
4578.153	Ce	2	-	4574.503	Fe	7	3	4571.481	Co	2	-
4578.139	Pr	40 w	3 w	4574.496	Zr II	3	2	4571.42	Tb	3	-
4578.087	In II	-	[50]	4574.49	Ne II	-	[5]	4571.402	In II	-	[2]
4578.07	Eu	10 W	-	4574.485	Mo	10	10	4571.390	Ir	2	-
4578.041	Mn	15	-	4574.43	U	-	2	4571.35	Pb	-	30
4578.004	Sm	4	-	4574.329	Cb	2	3	4571.330	In II	-	[5]
4577.95	Sb II	-	[25]	4574.32	Dy	2	-	4571.306	Rh	8	5
4577.9	bh C	-	-	4574.306	Ta	300	20	4571.3	bh Sc	10	-
4577.804	Er	8	-	4574.271	U	2	-	4571.28	Eu	2 W	-
4577.796	Dy	15	8	4574.212	Cr	10	-	4571.240	U	3	1
4577.778	Mo	10	15	4574.203	Pr	5 w	-	4571.233	Mn	20	-
4577.72	Rn I	-	[250]	4574.20	Eu	10	5	4571.215	In II	-	[30]
4577.687	Sm II	100	50	4574.18	As	-	3	4571.20	Tm	10	-
4577.66	O I	-	[30]	4574.119	Ce	3	-	4571.169	In II	-	[10]
4577.554	Re	2	-	4574.107	I II	-	[30]	4571.15	Mg I	20	2
4577.53	Pr	3	-	4573.993	Sc I	2	-	4571.105	Cr I	10	1
4577.422	Pt I	5	2	4573.956	Ru	5	-	4571.062	Mo	6 wh	6 wh
4577.416	Ru	5	-	4573.887	Tb	2	-	4571.045	Nd	5	-
4577.20	Kr II	-	[800]	4573.87	Dy	5	2	4570.987	U	6	25
4577.185	U	2	2	4573.855	Ba	50	20	4570.979	In II	-	[5]
4577.175	Ir	8	-	4573.81	Gd	5	-	4570.974	Th	3	1
4577.174	V I	40	30	4573.788	Hf II	15	15	4570.971	La II	8	10
4577.06	Xe II	-	[100 wh]	4573.759	Ne I	-	[30]	4570.948	Cb	2	3
4577.006	Pr	4	-	4573.703	Th	4	-	4570.932	In II	-	[30]
4576.92	Eu	10 W	-	4573.7	Eu	4 w	4	4570.909	Ti I	40	2
4576.79	O I	-	[15 d]	4573.69	Tm	5	-	4570.841	In II	-	[15]
4576.770	Cr	10	-	4573.687	U	30	40	4570.782	In II	-	[5]
4576.64	Pr	3	-	4573.635	Mn	10	-	4570.690	Hf II	8	20
4576.635	U	12	2	4573.560	Yt I	4	2	4570.655	W	30	10
4576.62	Ta	3 wh	-	4573.557	Ne I	-	[50]	4570.650	Yt I	3	-
4576.62	Tm	10	-	4573.46	Tm	3	10	4570.638	Ce	6	1

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities				
		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R		
4570.629	Th	4 w	-	-	4567.19	Se II	-	[10]	Bi	4563.95	Se II	-	[200]	Bi
4570.614	Ir	8 h	-	Ab	4567.158	Ce	2	-	-	4563.941	Pr	3	-	-
4570.595	Mo	5	5	-	4567.139	Ne I	-	[15]	Ps	4563.81	Hf	-	8 h	Me
4570.565	Pr	40	15	-	4567.11	Tm	35	15	-	4563.78	A	-	[20]	Rt
4570.557	U	1	3	-	4567.07	Dy	3	2	-	4563.780	Pr	5	-	-
4570.534	Cr	6	-	-	4566.983	Cs II	-	[15]	Ot	4563.766	Ti II	100	200	-
4570.501	Os	2	-	-	4566.929	U	2	4	-	4563.68	Tb	50	-	-
4570.50	Eu	3 W	-	m	4566.879	Mo	2 h	3 h	-	4563.658	Th	4	2	-
4570.424	V I	20	15	-	4566.861	Ta	100	2 h	-	4563.657	Cr	15	3	-
4570.417	Ir	8 h	-	Ab	4566.845	Pr	5	-	-	4563.63	Re	4	-	Me
4570.368	Th	4	-	-	4566.830	Ne I	-	[40]	Ps	4563.62	Mn	2	-	-
4570.350	Pr	3	-	-	4566.8	Rb	-	[4]	Dr	4563.590	W	15	5	-
4570.335	Cr I	15 wh	-	-	4566.776	Sm	15	-	-	4563.433	Ti I	15	3	-
4570.32	Rh	2	1	m	4566.707	Ru	7	-	-	4563.41	U	1	4	-
4570.31	Tm	10	15	-	4566.645	Th	6	3	-	4563.375	Ce	4	-	-
4570.248	Ru	10	-	-	4566.611	Co I	100	2 h	-	4563.316	Th	2	-	Fd
4570.24	I	-	[3]	Ke	4566.602	Cr I	10	-	-	4563.270	Er	10	3	-
4570.128	Mo	25	25	-	4566.592	Ce	2 h	-	-	4563.27	Hg	-	[5]	Ps
4570.116	Pr	20 w	2 h	-	4566.520	Fe	5	1	Bb	4563.245	Cr	12	2	-
4570.093	Ce	3	-	-	4566.484	Os	10	-	-	4563.238	Th	5	5	-
4570.027	La I	80	25	-	4566.422	Pr	3	-	-	4563.219	Nd	50	4	-
4570.025	Co I	300	-	-	4566.370	Er	5	1	-	4563.126	Pr	100	40	-
4570.019	Ir	50	2	-	4566.35	Ca	-	2 h	Ad	4563.051	Ce	2	-	-
4569.95	Eu	2	-	-	4566.226	W	8	2	-	4562.909	Ir	2	-	Ab
4569.913	U	25	40	-	4566.21	Dy	3	-	-	4562.74	Mn	8 h	-	-
4569.849	Nd	8	-	-	4566.205	Sm II	100	50	-	4562.68	Eu	10 W	-	Kn
4569.71	Te	-	[70]	Bi	4565.936	Hf	40	6	-	4562.633	Ti I	25	3	-
4569.69	A I	-	[2]	Ms	4565.929	Pr	10	-	-	4562.604	Os	5	-	-
4569.660	Ce	4	-	-	4565.888	Ne I	-	[60]	1Me	4562.597	Ru I	15	-	-
4569.644	Cr	50	10	-	4565.850	Ta	200	15	-	4562.52	Ho	6	1 h	Kn
4569.63	Er	4 W	-	m	4565.841	Ce	12 a	12	-	4562.5	La II	-	5 h	Me
4569.624	Pr	10	-	-	4565.73	Mn	10	-	-	4562.45	Te	-	[15]	Bi
4569.585	Sm	15	-	-	4565.703	Mo	2	25 h	-	4562.361	Ce	40	40	-
4569.530	Cr	15	4	-	4565.667	Fe I	8	1	-	4562.344	Nd	5	-	-
4569.484	Cb	2	5 h	-	4565.586	Co I	800 W	12	-	4562.23	Tb	15	-	-
4569.42	Cl II	-	[50]	Ks	4565.512	Cr I	20	30	-	4562.05	Ne II	-	[5]	Bn
4569.372	Pr	3	-	-	4565.50	Re	10	-	m	4561.942	Co I	25	-	-
4569.330	Er	5	-	-	4565.49	Ne II	-	[5]	Bn	4561.93	P II	-	[15]	Gu
4569.29	Tb	3	-	-	4565.469	Zr I	8	-	-	4561.88	S	-	[25]	Hn
4569.25	Tm	10	15	-	4565.44	Eu	4 w	-	-	4561.847	Nd	20	-	-
4569.192	U	2	4	-	4565.329	Fe	6	-	-	4561.84	Tm	50	10	-
4569.156	Cb	10	5	-	4565.321	W	12	2	-	4561.8	bh Yt	6	-	Me
4569.140	Ce	2	-	-	4565.31	Re	25	-	m	4561.75	Se II	-	[20]	Bi
4569.12	Xe	-	[2]	Hu	4565.235	Ce	6	1	-	4561.566	Ce	2	-	-
4569.05	Eu	6 w	-	-	4565.21	P II	-	[100 I]	Gu	4561.534	Cb	3	2 h	-
4569.020	Mo	5	8	-	4565.189	Rh I	15	4	-	4561.485	Cr	15 h	-	-
4569.01	Ne II	-	[70]	Bn	4565.116	Dy	8	4	-	4561.461	Pr	6	-	-
4569.005	Rh I	100	25	-	4564.97	In	-	10	Sq	4561.352	Th	4	-	-
4568.91	Tb	2	-	-	4564.959	Nd	4	-	-	4561.283	Ce	2 h	-	-
4568.90	Eu	6 w	-	Kn	4564.94	Yt I	2	-	m	4561.224	U	2	6	-
4568.864	Yb	4	-	-	4564.863	La I	10	3	-	4561.181	Nd	25	-	-
4568.827	Er	4	-	-	4564.85	Tb	6	-	-	4561.179	Sm II	3	-	-
4568.777	Fe I	10	1	-	4564.843	Co I	10	-	-	4561.160	Er	2	-	-
4568.613	W	6	-	-	4564.830	Er	3	-	-	4561.152	Bi	-	10	Om
4568.587	Ce	3	-	-	4564.82	A	-	[2]	Ms	4561.13	Mn	2	-	-
4568.545	Pr	30	3 h	-	4564.80	Pr	20 w	-	-	4561.100	Pr	3	-	-
4568.518	Tb	2	-	-	4564.8	bh Sr	5	-	L	4561.05	Gd	8	-	Kn
4568.42	Dy	2	-	m	4564.78	N II	-	[2]	Fl	4561.03	A II	-	[10]	Rt
4568.40	Tm	10	-	-	4564.774	Ce	3	-	-	4560.959	Ce	18	-	-
4568.373	Rh I	2	-	-	4564.691	Ru I	20	-	-	4560.958	Pr	5	-	-
4568.312	Ti II	3	8	-	4564.67	Tm	35	2	-	4560.892	Rh I	20	6	-
4568.226	U	4 h	18	-	4564.668	Mo	-	10 h	-	4560.890	Ir	12	-	Ab
4568.092	Ir	100	3	-	4564.622	Re	6	-	-	4560.83	Tm	10	15	-
4568.06	Rn	-	[5]	Rc	4564.592	V	-	150	Me	4560.767	Tb	2	-	-
4567.95	As	-	5	Ro	4564.57	Gd	4	-	Kn	4560.714	V I	30	25	-
4567.909	La I	100	25	-	4564.558	V	4	40	-	4560.60	I II	-	[5]	Mu
4567.906	Ru I	7	-	-	4564.53	Eu	15 w	-	Kn	4560.557	Ce	2	-	-
4567.863	Co	2 h	-	-	4564.528	Cb	20	30	-	4560.500	W	4	-	-
4567.845	Ne I	-	[10]	Ps	4564.44	Ca	-	4 h	Ad	4560.483	Mn	20 h	-	-
4567.79	Ca	-	2	Ad	4564.43	A	-	[20]	Rt	4560.423	Sm II	50	-	-
4567.740	Er	3	-	-	4564.388	Yt	4	2	-	4560.416	Nd	50	3	-
4567.72	Tb	10 w	-	-	4564.335	Pr	4	-	-	4560.38	Kr II	-	[3 hl]	Me
4567.687	U	20	40	-	4564.279	U	2	3	-	4560.280	Ce	25	25	-
4567.683	Si	25	25	-	4564.216	Ti I	3	-	-	4560.27	As	-	3	Ro
4567.66	Mo	-	30	Sy	4564.200	Cb	2	3	-	4560.261	U	-	3	-
4567.606	Nd	20	1	-	4564.183	Th	4	3	-	4560.132	Mo	25	25	-
4567.590	W	9	2	-	4564.170	Co	35	1	-	4560.11	Dy	2	-	-
4567.533	Co	2	-	-	4564.166	Cr	15	10	-	4560.096	Fe I	20	-	-
4567.481	Pr	3	-	-	4564.076	W	7	2	-	4560.072	Pt	1	2	-
4567.48	Os	5 s	-	-	4564.070	Sm II	15	-	-	4559.982	Ru I	20	-	-
4567.408	Ce	3	-	-	4564.056	Ir	2	-	Ab	4559.945	Ni I	10	-	-
4567.397	Mo	8	6	-	4563.995	Yb	35	2	-	4559.923	Ti I	50	5	-
4567.355	Yb	10	2	-	4563.989	Co I	10	1	-	4559.848	U	1	4	-
4567.344	Nd	6	-	-	4563.970	Er	5	-	-	4559.752	Mo	5	5	-
4567.242	Th	2	-	-	4563.955	U	12	1	-	4559.70	Pr	3 h	-	-

4559.7—4550.0 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4559.700	Re	30	w	-	-	4556.219	W	6	1	-	-	4553.16	Ne II	-	-	[50]	Bn
4559.673	Nd	40	-	-	-	4556.169	Cr	40	12	-	-	4553.129	Er	5	-	-	-
4559.649	U	15	-	-	-	4556.136	Nd	20	1	-	-	4553.1	h C	-	-	-	L
4559.622	Ce	3	-	-	-	4556.125	Fe I	150	35	-	-	4553.062	Ce	8	-	-	-
4559.57	I	-	-	[8 h]	Bl	4556.028	Mo	2	4	-	-	4553.051	V I	20	15	-	-
4559.49	Pr	3	-	-	-	4556.017	Re	2	-	-	-	4553.038	Th	3	3 h	-	-
4559.420	Cb	3 h	-	5 h	-	4556.008	U	-	4	-	-	4553.012	Zr I	10	-	-	-
4559.360	Yt I	6	-	6	-	4555.982	Pr	3	-	-	-	4552.892	Pd I	2	-	-	-
4559.342	Nd	4	-	-	-	4555.94	Xe II	-	-	[100 whl]	Hu	4552.89	Hg II	-	-	[30]	Ps
4559.295	La II	100	150	-	-	4555.922	Cu II	2	70	Sh	Sh	4552.829	Pr	5	-	-	-
4559.27	Se	-	-	[40]	Bt	4555.895	Fe II	12	12	-	-	4552.803	Mo	5	5	-	-
4559.263	Re	25	-	-	-	4555.815	Th	3	-	-	-	4552.77	Kr II	-	-	[3]	Me
4559.183	Nd	8	-	-	-	4555.71	Eu	12 W	-	-	m	4552.661	Sm II	80	40	-	-
4559.182	Ce	2	-	-	-	4555.693	Er	3	-	-	-	4552.64	Ca	-	3	-	Ad
4559.135	Pr	3	-	-	-	4555.620	Ce	2	-	-	-	4552.64	Se II	-	-	[2]	Bl
4559.123	Co I	10	-	-	-	4555.61	Th	-	10 h	-	-	4552.598	Ne I	-	-	[30]	IMe
4559.113	W	10	2	-	-	4555.561	Cb	3 h	2 h	-	-	4552.549	Fe	10	1	-	-
4559.070	Ru	6	-	-	-	4555.52	Zr I	30	2	Ks	Ks	4552.533	W	12	3	-	-
4559.034	Mo	3	3	-	-	4555.489	Ti I	125	60	-	-	4552.50	Si	-	40	-	Sy
4559.01	Tm	15	25	-	-	4555.425	Ce	5	-	-	-	4552.50	N II	-	-	[15]	Fl
4558.970	W	10	2	-	-	4555.392	Ne I	-	[30]	Ps	Ps	4552.486	La I	5	-	-	-
4558.908	Ce	2	-	-	-	4555.38	Eu	4	4	-	-	4552.459	Ti	150	50	-	-
4558.744	Mo	12	15	-	-	4555.355	Cs I	2000 R	100	Sv	Sv	4552.45	U	2	2	-	-
4558.743	Ir	8	-	-	Ab	4555.327	W	7	1	-	-	4552.436	Co	25	-	-	-
4558.728	Rh I	10	3	-	-	4555.298	Yt I	2	2	-	-	4552.423	Pt I	60	10	-	-
4558.711	Zr	3	-	-	-	4555.296	Cr	15	-	-	-	4552.378	S II	-	-	[200]	Hn
4558.659	Cr II	20	600 wh	-	-	4555.27	Te	-	[30]	Bl	Bl	4552.37	As II	-	50	-	Ro
4558.604	Ce	8	-	-	-	4555.26	Tm	25	50	-	-	4552.308	Ce	2	-	-	-
4558.485	Pr	4	1	-	-	4555.24	Dy	4	-	-	-	4552.262	Pr	60	-	-	-
4558.464	La II	100	200	-	-	4555.140	Nd	15	-	-	-	4552.20	Te	-	-	[50]	Bl
4558.346	Th	2	-	-	-	4555.130	Zr I	15	-	-	-	4552.19	Eu	5 W	5	-	Kn
4558.251	Cr	15	-	-	-	4555.095	U	20	40	-	-	4552.144	Er	8	1	-	-
4558.16	Dy	3	2	-	-	4555.092	Cr	15	50	-	-	4552.110	Ru I	7	-	-	-
4558.107	Ti I	15	3	-	-	4555.083	Ti I	12	2	-	-	4552.068	Ce	5	-	-	-
4558.107	Mo	30	30	-	-	4555.071	Th	3	-	-	-	4551.979	U	15	1	-	-
4558.094	Gd	30	3	-	-	4555.029	Cr II	-	40 h	-	-	4551.950	Ta	400	8	-	-
4558.080	Ce	2 h	-	-	-	4554.99	Gd	6	2	-	-	4551.950	Pt I	2	1 h	-	-
4558.078	Th	3 h	-	-	-	4554.967	Nd	5	1	-	-	4551.850	W	35	10	-	-
4558.048	U	12	4	-	-	4554.830	Cr	25	2	-	-	4551.843	V I	9	8	-	-
4558.042	Zr I	4	-	-	-	4554.824	Ne I	-	[40]	Ps	Ps	4551.7	Eu	2 w	-	-	-
4558.03	P II	-	-	[100 I]	Gu	4554.80	P II	-	[100]	Gu	Gu	4551.66	U	1	4	-	-
4558.03	Br	-	-	[15]	Bl	4554.790	Pr	4	1	-	-	4551.638	Rh I	25	10	-	-
4558.012	I	-	-	[15]	Ke	4554.778	Ir	4	-	-	-	4551.61	Tb	3	-	-	-
4557.980	Ce	3 h	-	-	-	4554.683	W	4	-	-	-	4551.538	Pr	4	-	-	-
4557.941	Yb	2	8	-	-	4554.65	Tm	5	-	-	-	4551.517	Cb	3 h	2	-	-
4557.856	Ti I	12	3	-	-	4554.593	Pt	10	5	-	-	4551.483	Re	2 h	-	-	-
4557.855	Pr	8	1	-	-	4554.590	Ca	-	2	-	-	4551.466	Gd	2	2	-	-
4557.842	Ir	5	-	-	Ab	4554.561	Ne I	-	[5]	Ps	Ps	4551.368	Dy	3	-	-	-
4557.84	Te	-	-	[300]	Bl	4554.557	Ce	6	-	-	-	4551.298	Os	150	8	-	-
4557.814	Ru I	5	-	-	-	4554.509	Ru I	1000]R	200	-	-	4551.297	Ce	20	-	-	-
4557.805	U	3	15	-	-	4554.498	Pr	2	-	-	-	4551.236	Ni I	5	-	-	-
4557.768	Nd	4	-	-	-	4554.459	Yt I	3	6	-	-	4551.177	Pr	3	-	-	-
4557.629	Tb	2	-	-	-	4554.443	Sm II	60	-	-	-	4551.08	Eu	5 w	-	-	-
4557.43	Pr	3	-	-	-	4554.415	Ne I	-	[10]	Ps	Ps	4551.04	Te	-	-	[15]	Bl
4557.406	Ce	3	-	-	-	4554.333	Ce	2	-	-	-	4551.035	Cb	1	3 h	-	-
4557.380	Nd	10	-	-	-	4554.319	A I	-	[15]	Ms	Ms	4550.98	U	5	2	-	-
4557.31	Re	2 h	-	-	m	4554.234	Dy	2	-	-	-	4550.964	Gd	10	10	-	-
4557.30	Er	3	-	-	Ed	4554.042	Ba II	1000 R	200	-	-	4550.922	Ce	2	-	-	-
4557.28	Tb	4	-	-	-	4554.035	Ce	35 s	1	-	-	4550.92	Tb	2	-	-	-
4557.237	Sc I	3	-	-	-	4554.028	Mo	1	4	-	-	4550.89	Dy	5	2	-	-
4557.230	Tb	4	-	-	Kn	4553.967	Zr II	4	12	-	-	4550.882	Pr	10	2	-	-
4557.2	Pb II	-	-	[2]	Ea	4553.949	Cr	20	3	-	-	4550.795	Fe	50	-	-	-
4557.161	Rh I	3	1	-	-	4553.858	U	4	1	-	-	4550.79	Xe II	-	-	[8 h]	Hu
4557.038	Ce	3	-	-	-	4553.85	Th	3	2	-	-	4550.777	La I	4	3	-	-
4556.962	Tb	3 d	-	-	Kn	4553.836	Cb	5	8	-	-	4550.775	Ir	80	-	-	-
4556.96	Eu	4	-	-	m	4553.798	Mo	20	20	-	-	4550.769	Pr	10	-	-	-
4556.94	Pr	2	-	-	-	4553.776	Hf	10	-	-	-	4550.714	Zr I	3	-	-	-
4556.869	W	15	5	-	-	4553.755	Ce	2	-	-	-	4550.67	Eu	20 w	-	-	-
4556.835	Cb	3	5 h	-	-	4553.7	bh Pb	6	-	L	L	4550.670	Pr	10 d	-	-	-
4556.809	Th	4	-	-	-	4553.694	Ta	200 I	2	-	-	4550.643	Cb	1	3	-	-
4556.738	V	1	5	-	-	4553.662	W	6	1	-	-	4550.565	Ce	3	-	-	-
4556.735	Nd	15	-	-	-	4553.561	Yb	20	60	-	-	4550.445	Tb	15	-	-	-
4556.698	Ne I	-	-	[2]	Ps	4553.503	Mo	-	25	-	-	4550.444	Th	4	-	-	-
4556.67	Tm	35	70	-	-	4553.498	Pr	4	-	-	-	4550.410	Os	150	10	-	-
4556.656	Pr	2	-	-	-	4553.419	Ce	2	-	-	-	4550.394	Nd	3 h	-	-	-
4556.626	Sm	10	-	-	-	4553.415	Ti I	6	-	-	-	4550.36	Te	-	-	[15]	Bl
4556.61	Kr II	-	-	[200 hi]	Me	4553.327	Co I	25	-	-	-	4550.343	W	7	1	-	-
4556.55	Br	-	-	[4]	Bl	4553.320	Mo	12	4	-	-	4550.34	U	1	2	-	-
4556.503	Sm	5	-	-	-	4553.31	Mn	12 h	-	-	-	4550.298	Ce	6	-	-	-
4556.459	Dy	3	4	-	-	4553.3	Eu	3 w	-	Kn	Kn	4550.298	Kr I	-	-	[40]	I
4556.45	Tb	20 w	-	-	-	4553.274	Ca	-	4 h	-	-	4550.176	La I	3	2	-	-
4556.354	Ta	200	5	-	-	4553.256	Pr	5 h	-	-	-	4550.14	Hf	4	-	-	Me
4556.33	U	1	2	-	-	4553.239	Hf	5 h	-	-	-	4550.06	Pr	15	3	-	-
4556.26	Pr	4	-	-	-	4553.220	Mo	12	6	-	-	4550.047	Cb	3 h	10 h	-	-
4556.224	Ce	3	-	-	-	4553.175	Ni I	15 r	-	-	-	4550.036	Sm	20	-	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4550.00	Dy	3 h	-	-	m	4546.43	Tb	3	-	-	-	4543.18	Eu	10 W	-	-	Kn
4549.967	Ce	2	-	-	-	4546.329	Pr	3	-	-	-	4543.05	Tb	4	-	-	-
4549.957	Ru	10	-	-	-	4546.249	U	2	3	-	-	4543.03	U	-	2 h	-	-
4549.87	As II	-	10	-	Ro	4546.063	Ce	8	-	-	-	4543.01	Hf	5	2	-	-
4549.852	U	12	20	-	-	4546.03	P	-	[70]	-	Gu	4542.955	Ce	6 r	-	-	-
4549.838	Pr	15	4	-	-	4545.99	Mo	-	-	4 h	-	4542.93	Br	-	[250]	-	Bi
4549.74	Eu	6 w	-	-	-	4545.988	Co I	10	-	-	-	4542.887	W	15	3	-	-
4549.72	Tb	10 W	-	-	-	4545.97	Te	-	[70]	-	Bl	4542.886	Mo	3	4	-	-
4549.718	Mn	12	-	-	-	4545.956	Cr I	200	125	-	-	4542.871	Ir	3	2 wh	-	-
4549.656	Co I	600	-	-	-	4545.873	Ce	5	-	-	-	4542.799	Cb	5	5	-	-
4549.647	V	30	20	-	-	4545.853	Pr	3	-	-	-	4542.727	Gd	3	3	-	-
4549.644	Ce	6	-	-	-	4545.801	Sm II	4	-	-	-	4542.621	Cr	30	8	-	-
4549.628	Ti II	100	200	-	-	4545.800	Os	5	1	-	-	4542.603	Nd	50	5	-	-
4549.625	Zr I	15	2	-	-	4545.720	Ru	6	-	-	-	4542.6	bh Zr	25	-	-	L
4549.547	S	-	[80]	-	Hn	4545.680	Ir	200	4	-	-	4542.59	U	-	2	-	-
4549.533	W	6	1	-	-	4545.62	Eu	3 W	-	-	-	4542.554	Sc I	2	-	-	-
4549.52	Eu	6	5	-	-	4545.580	U	20	25	-	-	4542.537	Pr	20	8	-	-
4549.502	La I	15	6	-	-	4545.532	Re	10	-	-	-	4542.436	Mn	80	5	-	-
4549.470	Fe II	100	100	-	-	4545.452	Ce	4	-	-	-	4542.425	Ru	12	-	-	-
4549.46	Au	-	5	-	-	4545.393	V I	40	30	-	-	4542.424	Fe	3	1	-	-
4549.427	Ru I	10	-	-	-	4545.353	Dy	3	4	-	-	4542.39	Tb	4 d	-	-	-
4549.420	Mo	8	8	-	-	4545.335	Pr	6	2	-	-	4542.229	Er	2	-	-	-
4549.353	In II	-	[10]	-	Ps	4545.335	Cr I	25	12	-	-	4542.216	Zr I	15	-	-	-
4549.23	As II	-	125	-	Ro	4545.328	Nd	10	-	-	-	4542.114	U	1	3	-	-
4549.159	Mo	6	5	-	-	4545.310	Mn	12	-	-	-	4542.075	Ce	3	-	-	-
4549.130	Tb	3	-	-	-	4545.243	Co I	50	-	-	-	4542.050	Nd	50	5	-	-
4549.06	Tb	20	-	-	-	4545.23	Xe II	-	[200 whl]	-	Hu	4542.049	Sm	50	-	-	-
4549.051	In II	-	[15]	-	Ps	4545.218	Na I	15	-	-	Da	4542.040	Yt	3	2	-	-
4549.017	Nd	5	-	-	-	4545.2	bh Zr	18	-	-	L	4542.033	Gd	50	50	-	-
4548.93	Ho	3	2	-	Ex	4545.197	Ce	3	-	-	-	4541.993	Pr	3 h	-	-	-
4548.884	Ce	10	-	-	-	4545.164	Re	30	-	-	-	4541.96	Eu	4 W	-	-	-
4548.804	Ir	4	-	-	-	4545.144	Ti II	3	15	-	-	4541.797	Re	25	-	-	-
4548.768	Cb	1	3 h	-	-	4545.11	Gd	2	-	-	Kn	4541.788	La I	30	5	-	-
4548.767	Ti I	125	25	-	-	4545.103	Pr	4	1	-	-	4541.775	Ce	3	-	-	-
4548.738	In II	-	[15]	-	Ps	4545.08	A	-	[200]	-	Rt	4541.716	Hf	12	2	-	-
4548.727	Rh I	25	-	-	-	4545.044	Mo	4	6	-	-	4541.705	U	8	12	-	-
4548.662	Os	100	5	-	-	4544.955	Ce	10	-	-	-	4541.698	Dy	6	8	-	-
4548.59	Tm	35	-	-	-	4544.901	Th	3	-	-	-	4541.673	Er	5	1	-	-
4548.582	Mn	80	5	-	-	4544.834	Er	4	-	-	-	4541.671	Na I	10	-	-	Da
4548.560	U	4	6	-	-	4544.826	Sm II	10	-	-	-	4541.617	Th	8 d	-	-	-
4548.539	Pr	60	30	-	-	4544.8	Pb II	-	[4]	-	Ea	4541.61	He	-	[5]	-	Ps
4548.485	Ir	100	5	-	-	4544.746	A	-	[30]	-	Ms	4541.60	A I	-	[20]	-	Ms
4548.40	P	-	[50]	-	Gu	4544.73	Sb II	-	5	-	Dv	4541.565	Ce	3	-	-	-
4548.387	Ce	2	3	-	-	4544.688	Ti I	150	60	-	I	4541.556	Mo	20	20	-	-
4548.356	Yb	3	3	-	-	4544.676	Sc I	3	-	-	-	4541.523	Fe II	2	2	-	-
4548.35	Tb	3	-	-	-	4544.619	Cr I	100	70	-	-	4541.513	Cr	30	6	-	-
4548.239	Nd	20	-	-	-	4544.588	Pr	3	-	-	-	4541.40	Se II	-	[25]	-	Bl
4548.112	Ti I	7	1	-	-	4544.570	W	10	1	-	-	4541.398	V	3 h	3 h	-	-
4548.087	Mo	-	10	-	-	4544.518	Th	8	5	-	-	4541.35	Yb	-	6	-	Me
4548.022	Sm	10	-	-	-	4544.502	Ne I	-	[50]	-	Ps	4541.339	U	4	-	-	-
4548.010	Gd	50	50	-	-	4544.48	Cl II	-	[10]	-	Ke	4541.297	Hf II	15	20	-	-
4547.872	Pt I	3	1 h	-	-	4544.414	Mn	60	5	-	-	4541.276	Er	5	1	-	-
4547.853	Ru	20	-	-	-	4544.367	W	2	2	-	-	4541.269	Nd	50	4	-	-
4547.851	Fe	200	100	-	S	4544.355	U	6	4	-	-	4541.267	Pr	20	1	-	-
4547.851	Cb	2	3	-	-	4544.306	Yt I	5	3	-	-	4541.209	Th	6	-	-	-
4547.850	Ti I	10	1	-	-	4544.29	I II	-	[8]	-	Ke	4541.203	Ce	2	-	-	-
4547.78	A	-	[20]	-	Rt	4544.271	Rh I	25	4	-	-	4541.137	Pd I	15	3	-	-
4547.75	Eu	4 W	4	-	-	4544.257	Nd	6	-	-	-	4541.12	P	-	[70]	-	Gu
4547.728	Ne I	-	[15]	-	Ps	4544.246	Gd	6 h	6 h	-	-	4541.071	Cr I	30	8	-	-
4547.710	Ce	2	-	-	-	4544.12	Dy	2	-	-	m	4541.048	Pr	4	-	-	-
4547.532	Mo	4 s	4 s	-	-	4544.11	Ne II	-	[5]	-	Bn	4541.032	Cu II	-	5	-	Sh
4547.43	Dy	2	-	-	-	4544.1	bh Sr	5	-	-	L	4541.022	Mo	4	4	-	-
4547.41	U	-	2	-	-	4544.019	Hf	20	2	-	-	4541.021	Ti I	2	-	-	-
4547.33	Ru	25	-	-	-	4544.009	Ti II	5	20	-	-	4541.004	Th	2	-	-	-
4547.33	Mn	8	-	-	-	4543.965	Pr	10	3	-	-	4540.932	Hf	50	2	-	-
4547.290	Ce	2 h	-	-	-	4543.945	Sm II	100	50	-	-	4540.89	Xe II	-	[200 hl]	-	Hu
4547.234	Ni I	30	-	-	-	4543.942	Th	5	-	-	-	4540.873	Ti I	6	-	-	-
4547.221	Eu	3	-	-	-	4543.935	Yb	-	10	-	-	4540.785	Co I	30	-	-	-
4547.218	Ne I	-	[10]	-	Ps	4543.91	Tb	2	-	-	-	4540.771	Rb II	-	10	-	Rr
4547.205	Mo	4 l	4 l	-	-	4543.86	I	-	[10]	-	Ke	4540.755	Mo	25 d	25 d	-	-
4547.149	Ta	150	2	-	-	4543.812	Co I	500 W	-	-	-	4540.719	Cr	40 d	40	-	-
4547.026	Fe I	7	1	-	-	4543.793	Eu	6	-	-	-	4540.707	La II	4	25	-	-
4546.966	Er	2	-	-	-	4543.76	As	-	200	-	Ro	4540.66	Eu	4 W	4	-	-
4546.930	Ni I	50	2	-	-	4543.74	Cr	20	2	-	-	4540.63	I II	-	[8]	-	Ke
4546.930	Ru I	15	-	-	-	4543.71	Cs	-	[10]	-	Bs	4540.626	Ce	4	-	-	-
4546.837	Ce	2	-	-	-	4543.688	Ce	2	-	-	-	4540.57	Tb	3	-	-	-
4546.83	Hf	10	2	-	Me	4543.687	Ru I	15	-	-	-	4540.502	Cr I	40 d	40	-	-
4546.822	Cb	15	30	-	-	4543.632	U	50	80	-	-	4540.483	Ti I	7	1	-	-
4546.8	Rn	-	[35]	-	Wa	4543.575	Ce	3	-	-	-	4540.425	Th	8	8	-	-
4546.710	Th	4	-	-	-	4543.534	Pr	25 w	3	-	-	4540.376	Ne I	-	[50]	-	IMe
4546.64	Te	-	[50]	-	Bl	4543.509	W	25	10	-	-	4540.335	Cu	-	3	-	Sh
4546.631	Pr	5 w	-	-	-	4543.400	Mo	2	15	-	-	4540.313	W	7	1	-	-
4546.572	Cr	3	-	-	-	4543.399	Th	6	-	-	-	4540.207	Cu	-	2	-	Sh
4546.487	W	30	10	-	-	4543.278	W	7	1	-	-	4540.20	P	-	[70]	-	Gu
4546.475	Dy	2	-	-	-	4543.208	Th	3	2	-	-	4540.188	Sm II	40	-	-	-

4540.1—4529.9 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
4540.180	Er	5	-	-	4536.73	Dy	2 h	-	-	4533.516	Gd	3	-	-
4540.151	Pr	5	1	-	4536.657	W	15	6	-	4533.499	Yb	15	3	-
4540.084	Cb	5	1	-	4536.647	Ce	3	-	-	4533.309	Th	12	8	-
4540.025	Gd	80	200	-	4536.608	U	8	2	-	4533.303	Pr	5	-	-
4540.008	V I	15	12	-	4536.6	bh Sc	40	-	Me	4533.244	Ti I	150	40	-
4539.983	Zr I	15	-	-	4536.513	Sm	40	-	-	4533.228	Er	6	-	-
4539.97	As II	-	200	Ro	4536.43	Hg	-	[5]	Ps	4533.225	Ce	2 h	1	-
4539.917	Os	100	2	-	4536.312	Ne I	-	[150]	Ps	4533.217	Sm	2	-	-
4539.788	Cr I	40	25	-	4536.201	Ce	4	-	-	4533.152	Hf II	20	40	-
4539.758	Hf II	3	6	-	4536.171	Sm II	4	-	-	4533.11	Ra II	-	[300]	Rs
4539.746	Ce	20	10	-	4536.15	Dy	2	-	-	4533.048	U	2	4	-
4539.696	W	4	1	-	4536.053	Ti I	40	20	-	4532.910	Ir	2	-	-
4539.695	Cu I	100 W	80 W	-	4536.048	U	2	3	-	4532.867	Tb	80	2	-
4539.69	Eu	3 w	3	m	4536.014	Re	20	5	-	4532.788	Pr	4	-	-
4539.638	Mo	6	6	-	4535.943	Nd	5	-	-	4532.750	Cr	15	2	-
4539.608	Yt I	2	-	-	4535.939	Th	8 w	-	-	4532.74	Se I	-	[20]	Rd
4539.588	Ce	3	-	-	4535.922	Ti I	40	20	-	4532.717	Er	2	-	-
4539.423	Nd	3	-	-	4535.921	Pr	125	100	-	4532.586	U	4	1	-
4539.416	Er	2	-	-	4535.872	Er	4	1	-	4532.54	Dy	2	-	Ed
4539.39	Tm	10	-	-	4535.83	Te	-	[15]	Bl	4532.50	Tb	2	-	-
4539.294	Yb	2	-	-	4535.749	Zr I	10	-	-	4532.500	Cs	-	[10]	Sv
4539.29	Eu I	12	2	Kn	4535.721	Cr I	125	100	-	4532.49	Xe II	-	[100]	Hu
4539.288	Pr	30 d	3 w	-	4535.72	Tb	2 h	-	-	4532.488	Ce	6	-	-
4539.28	U	-	3 h	-	4535.707	Cb	1	3	-	4532.483	Cb	1	5	-
4539.260	Nd	10	2	-	4535.653	W	2	1	-	4532.446	Ru	7	-	-
4539.206	Mo	4	3	-	4535.59	Eu	15	-	Kn	4532.445	Sm	60	-	-
4539.168	Ne I	-	[50]	Ps	4535.587	Ru	12	-	-	4532.36	As	-	10	Ro
4539.157	Dy	3	-	-	4535.578	Eu	4	-	-	4532.336	Pr	15	-	-
4539.096	Ti	15	4	-	4535.575	Ti I	80	50	-	4532.31	Mn	3 h	-	-
4539.085	U	5	-	-	4535.543	Mo	6	5	-	4532.308	Nd	5	-	-
4539.069	Ce	8	-	-	4535.532	U	2	-	-	4532.264	Th	8	4	-
4538.942	Cs II	-	[30]	Sv	4535.528	Ce	2	-	-	4532.190	V	-	20	Me
4538.877	Mo	5	4	-	4535.51	A	-	[10]	Rt	4532.156	Er	3	-	-
4538.87	La II	-	8 hl	Me	4535.50	In	-	5	Sq	4532.15	Tm	15	1	Me
4538.77	Br	-	[15]	Bl	4535.47	Ne II	-	[30]	Br	4532.143	Ti	3	-	-
4538.76	Dy	5	2	-	4535.385	Mo	20	20	-	4532.010	Ce	5	-	-
4538.73	Tb	5	-	-	4535.366	Hf II	10	20	-	4531.849	Er	2	-	-
4538.671	Ir	25	-	-	4535.355	Ce	2 h	-	-	4531.846	Pr	2	-	-
4538.664	Ru	10	-	-	4535.263	U	2	3	-	4531.82	Tb	4 w	-	-
4538.548	Sm	10	-	-	4535.257	Th	3	-	-	4531.81	Gd	3	1	-
4538.457	Mn	40	-	-	4535.242	Pr	2	-	-	4531.801	Ru	5	-	-
4538.422	Ce	2	-	-	4535.155	Ce	2	-	-	4531.8	bh C	-	-	L
4538.412	Mo	5	5	-	4535.146	Cr I	50	30	-	4531.721	Th	3	3	-
4538.309	Ne I	-	[300]	Ps	4535.1	bh Ca	2	-	L	4531.652	Fe I	8	1	-
4538.190	U	25	40	-	4535.09	U	-	4 h	-	4531.633	Ce	4	-	-
4538.155	Er	2	-	-	4535.054	W	15	5	-	4531.62	Ho	5	2	Ex
4538.07	Eu	-	20 W	Kn	4535.001	Ir	2	-	-	4531.511	Pr	3	-	-
4538.06	Kr I	-	[3]	Mo	4534.885	Pr	4	-	-	4531.45	Cs	-	[15]	Bs
4538.018	Pr	15 w	-	-	4534.881	Mo	20 h	20 h	-	4531.348	Sr I	10	-	ISn
4537.954	Sm II	50	25	-	4534.856	Sm	10	-	-	4531.319	U	-	6	-
4537.884	Ce	6	-	m	4534.837	Th	3	-	-	4531.312	Ce	8	-	-
4537.826	Ti	2	-	-	4534.782	Ti I	100	40	-	4531.28	Ho	2	2 h	Kn
4537.821	Gd	150	100	-	4534.78	A	-	[20]	Ms	4531.152	Fe I	125	-	S
4537.81	Tb	2	-	-	4534.714	W	15	5	-	4531.12	Gd	5	-	m
4537.751	Ne I	-	[1000]	IMe	4534.69	Pb	-	5	Sx	4531.11	Er	5	-	Ed
4537.683	Ne I	-	[300]	Ps	4534.68	Se I	-	[10]	Rd	4531.089	Pr	10 w	2 w	-
4537.67	A II	-	[10]	Rt	4534.66	Ne II	-	[15]	Br	4531.067	Ce	3	-	-
4537.664	V I	25	20	-	4534.64	Cs	-	[10]	Bs	4530.963	Co I	1000 w	8	-
4537.615	Os	50	-	-	4534.58	Ho	4	-	Kn	4530.945	Ce	3	-	-
4537.609	Zr I	3	-	-	4534.490	Ru	6	-	-	4530.890	Re	20	-	-
4537.591	Cb	5	5 h	-	4534.463	Mn	30	-	-	4530.854	Ru I	60	-	-
4537.587	Re	3	-	-	4534.429	Mo	20 h	30 h	-	4530.846	Ta	300	50	-
4537.578	La I	8	-	-	4534.4	bh Zr	30	-	L	4530.819	Cu I	200	50	-
4537.569	Nd	2	-	-	4534.370	W	3	2	-	4530.815	Ce	3	-	-
4537.556	Sm	4	-	-	4534.26	Mg II	4	-	Fl	4530.810	Sb II	-	9	-
4537.443	Ru	7	-	-	4534.221	Ce	4	-	-	4530.79	U	-	2	-
4537.386	Pr	2	-	-	4534.166	Fe II	3	1	Do	4530.789	V	12	9	-
4537.325	Mo	1	3	-	4534.154	Pr	150	80	-	4530.78	P II	-	[150 I]	Gu
4537.23	Tb	12	-	-	4534.13	So II	-	[8]	Bt	4530.739	Cr I	150	125	-
4537.228	Ti	10	3	-	4534.13	Tb	5	-	-	4530.595	Rh	4	2	-
4537.156	Yt I	3	2 h	-	4534.129	Th	10	5	-	4530.57	A II	-	[10]	Rt
4537.153	Pr	2	-	-	4534.076	Yt I	3	2	-	4530.562	La II	15	25	-
4537.14	Tb	4	-	-	4533.994	Co I	500	8	-	4530.468	W	15	4	-
4537.116	U	2	4	-	4533.967	Ti II	30	150	-	4530.37	N	-	[25]	Fl
4537.07	Te	-	[50]	Bl	4533.933	Pr	2	-	-	4530.358	Rb II	-	15	Rr
4537.070	Th	20	8	-	4533.925	Cb	1 h	5 h	-	4530.328	Nd	10	-	-
4537.01	Hg	-	[10]	Ps	4533.925	V	15	12	-	4530.309	Er	2	2	-
4536.980	Gd	20	2	-	4533.824	Rb II	-	6	Rr	4530.22	I I	-	[8]	Db
4536.92	Xe II	-	[40 wh]	Hu	4533.81	P II	-	[15]	Gu	4530.08	Ho	3	2	Ex
4536.91	Tb	12	-	-	4533.799	Sm	40	-	-	4530.050	In	-	10	-
4536.886	Ce	6	-	-	4533.799	Nd	30	-	-	4530.034	Mn II	-	[10]	Cz
4536.824	U	1	3	-	4533.791	Pr	5	2	-	4529.985	Ta	3	10 h	-
4536.800	Mo	40	80	-	4533.709	U	3	3	-	4529.949	Sm	4	-	-
4536.782	Yb	3	-	-	4533.628	Er	3	-	-	4529.935	Nd	40	-	-
4536.78	Cl II	-	[20]	Ks	4533.561	Ce	3 h	-	-	4529.930	Pr	25 w	4 w	-

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4529.928	Re	40 w	-	4526.725	Cs II	- [35]	Sv	4523.237	Ba	60	10
4529.914	Ce	5	-	4526.686	Eu	100	-	4523.209	Pr	3	-
4529.871	Yb	12	-	4526.685	Ne I	- [15]	Ps	4523.182	Sm	8	-
4529.851	Cr I	25	8	4526.67	Eu	5	2	4523.14	Cr II	-	[400 hl] Me
4529.790	Mn	50	-	4526.641	U	1	3	4523.130	Zr I	4	-
4529.780	Dy	2	2	4526.466	Cr I	50	30	4523.077	Ce	35	25
4529.77	Br I	- [80]	Ks	4526.465	Pr	3 w	-	4523.036	Sm II	40	20
4529.764	Nd	3	-	4526.45	Tb	2	-	4523.006	Pt I	10	1
4529.76	Tb	4	-	4526.432	Ru	6	-	4522.92	P II	-	[50] Gu
4529.760	W	15	4	4526.419	Fe	10	1	4522.897	Mo	3	3
4529.707	U	12	3	4526.411	Zr I	5 h	-	4522.846	Ca	-	[15] Sv
4529.676	Fe	10	2	4526.407	Ir	2	-	4522.838	Gd	50	4
4529.674	Os	80	2	4526.380	Nd	8	-	4522.825	Nd	10	2
4529.60	Br	- [10]	Bl	4526.374	Ti I	5	1	4522.805	Ti I	100	70
4529.586	V I	15	8	4526.372	Ce	2	-	4522.737	Er	4 l	-
4529.563	Fe I	6	-	4526.369	Mo	25	25	4522.72	Re	100	-
4529.54	Te	- [30]	Bl	4526.350	Ce	2	-	4522.68	Dy	3 h	m
4529.49	Al	-	5	4526.21	Cl I	-	[25] Ks	4522.68	Hg	-	[2] Ps
4529.487	Th	3	2	4526.177	Ne I	-	[50] Ps	4522.66	Ne II	-	[50] Brn
4529.476	Ne I	- [30]	Ps	4526.14	Ho	2	2 h	4522.634	Fe II	60	50
4529.465	Ti II	5	40	4526.125	Zr I	3	-	4522.602	Eu I	200 R	200
4529.416	Cb	2	3	4526.109	La II	100	150	4522.590	Ce	3	-
4529.398	Mo	25	20	4526.108	Cr	20	6	4522.58	Eu	500	-
4529.378	Er	4	-	4526.096	Dy	3	-	4522.57	Tm	200	300
4529.37	Tm	80	5	4526.083	Eu	6	-	4522.544	Cb	1	3
4529.295	V I	9	3	4526.04	Sb	-	[10] Lg	4522.538	Sm	60	-
4529.28	I	- [25]	Bl	4526.031	Th	3	-	4522.468	Ce	2	-
4529.277	Ce	3	-	4525.986	Re	30	-	4522.43	Gd	3	-
4529.18	S	- [8]	Ms	4525.957	U	8 h	5	4522.372	La II	200	400
4529.17	U	-	2	4525.938	Tb	3	-	4522.36	Ca	-	[15] Bs
4529.154	Nd	2	-	4525.935	Ru	7	-	4522.323	A I	-	[800] I
4529.054	Ru	10	-	4525.934	Ti	2	-	4522.22	Ta	-	[15] Bl
4528.943	Re	2	-	4525.861	Mo	2	3	4522.215	Ir	2	-
4528.915	La I	2	-	4525.787	Co I	5	-	4522.192	Cb	1 h	10 h
4528.910	Pr	3	-	4525.764	Ne I	-	[70] IMe	4522.190	Mo	25	30
4528.725	Rh I	500 r	60	4525.7	bh Yt	2	-	4522.143	Pr	3	-
4528.705	Ce	2	-	4525.649	U	1	3	4522.1	F	-	[2 h] Di
4528.62	Kr II	- [3 hl]	Me	4525.62	Br I	-	[125 l]	4522.077	Ce	25	15
4528.619	Fe I	600	200	4525.48	Lu	2 h	-	4522.042	Yt I	3	2
4528.618	Mo	15 l	10 l	4525.385	U	-	2	4522.037	Er	10	-
4528.61	As II	-	10	4525.34	Tb	2	-	4522.018	Cr	12	1
4528.56	U	-	6	4525.324	Mo	6	8	4521.959	Ce	6	-
4528.49	Eu	8 w	-	4525.303	La II	100	100	4521.956	Gd	25	5
4528.472	Ce	30	15	4525.3	bh Yt	5	-	4521.939	Zr I	3	-
4528.468	V	2	10 wh	4525.208	Rh I	5	2	4521.86	Xe II	-	[50 hl] Hu
4528.42	Ir	2	-	4525.157	V I	15	12	4521.834	Tb	3	-
4528.171	U	1	3	4525.146	Fe I	100	50	4521.710	Ta	2	-
4528.105	Yt I	2	-	4525.01	Tb	3	-	4521.591	U	4	15
4528.097	I	-	[40]	4524.946	S II	-	[150] Hn	4521.554	Mo	5	-
4528.068	Pr	2	-	4524.946	Ba II	80	30	4521.339	Ir	3	-
4527.988	V	10	4 w	4524.933	Co	3	-	4521.298	Gd	25	2
4527.971	U	1	5	4524.869	Os	20	2	4521.266	Th	2	3 h
4527.957	Ce	3	-	4524.841	Cr	20	3	4521.26	bh Zr	20	-
4527.933	Co I	100	2 h	4524.741	Sn I	500 wh	50	4521.245	Nd	6	-
4527.88	Tm	15	-	4524.74	Hf II	10	15	4521.149	Mo	8	15
4527.869	Mo	4 h	4 h	4524.732	Ti II	10	10	4521.141	Cr	25	10
4527.787	Yt I	25	40	4524.726	Mo	4	5	4521.135	Ce	3	-
4527.783	Er	40	9	4524.695	Pr	5	1	4521.094	Ta	200	10 h
4527.78	Dy	8	4	4524.68	S II	-	[20] Hn	4521.09	Tm	15	15
4527.74	Eu	2	-	4524.680	Xe I	-	[400] I	4521.08	Lu	2 h	-
4527.733	Th	3	2	4524.591	Ce	2	-	4520.986	Eu	5	-
4527.725	Ne I	- [15]	Ps	4524.495	Eu	12	-	4520.951	Th	3	1
4527.70	Rn	- [10]	Wa	4524.365	Pr	10 w	2 w	4520.950	Ru I	25	-
4527.695	U	3	2	4524.338	Mo	30	30	4520.901	Pt I	40	2 h
4527.650	Cb	1	30	4524.33	Gd	3	1	4520.836	Cb	1	3
4527.495	Ta	150	5	4524.326	Tb	3	-	4520.778	Pr	40	15
4527.471	Cr	15 d	6	4524.216	V I	40	30	4520.57	Hf	10 h	4
4527.455	Ti I	3	-	4524.21	Xe II	-	[100] Hu	4520.49	P	-	[15] Gu
4527.440	Sm	5	-	4524.133	Tb	2	-	4520.441	U	1	3
4527.348	Ce	50	25	4524.125	Cb	5 h	5 h	4520.405	Ce	3	-
4527.34	Eu	6 W	5	4524.099	Gd	8	2	4520.386	Pr	3	1
4527.339	Cr I	15 d	8	4524.029	Ce	4	-	4520.318	Os	20	1
4527.312	Ti I	100	50	4523.991	Pr	4	-	4520.285	Mo	3	3
4527.3	F	-	[3 h]	4523.912	Sm II	100	50	4520.252	Nd	5	-
4527.243	Nd	15	2	4523.909	Zr I	3	-	4520.236	Fe II	40	30
4527.237	Yt I	40	50	4523.885	Re	40	-	4520.170	V I	25	20
4527.236	Er	50	10	4523.838	Gd	8	-	4520.084	Gd	50	3
4527.175	Tb	2	-	4523.73	P	-	[50] Gu	4520.083	U	6	-
4527.15	I	- [15 h]	Bl	4523.57	In	-	10	4520.08	Tb	3	-
4527.035	Eu	3	-	4523.569	Nd	12	2	4520.037	Mn	12	-
4526.997	Ir	3	-	4523.50	Dy	2	-	4519.986	Ni I	25	-
4526.962	Re	5 h	-	4523.410	Ob	30	30	4519.864	Os	10	-
4526.935	Ca I	100	3 wh	4523.389	Mn	50	-	4519.83	Dy	5	4
4526.918	Er	2	2	4523.344	U	6	8	4519.828	Cr	10	-
4526.781	Co I	10	-	4523.3	bh Sr	4	-	4519.770	U	2	1

4519.7—4509.4 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4519.750	Th	4	1	-	4516.290	Ce	4	-	-	4512.995	Ni I	2	-	-
4519.744	Re	40 d	-	-	4516.269	Ru I	12	-	-	4512.95	Tb	12	-	-
4519.69	Xe	-	[2]	Hu	4516.25	Se II	-	[70]	Bl	4512.907	W	30	10	-
4519.657	Gd	150	100	-	4516.18	Br	-	[20]	Bl	4512.88	Ca	-	4	Ad
4519.635	Sm II	150	80	-	4516.177	Pd I	10	1	-	4512.827	U	1	2	-
4519.629	Pr	9	-	-	4516.14	As II	-	15	Ro	4512.738	Ti I	100	60	-
4519.592	Ce	8	-	-	4516.138	Tb	2	-	-	4512.73	V	1	40 h	-
4519.586	Mo	-	40	-	4516.078	Ir	6	-	-	4512.71	P	-	[15]	Gu
4519.58	Tm	50	1	-	4516.050	Cu II	-	2	Sh	4512.632	I	-	[30]	Bl
4519.556	Eu	3	-	-	4515.990	U	2	-	-	4512.616	Eu	2	-	-
4519.527	Sm II	2	-	-	4515.979	Th	4	4	-	4512.608	Cr	8 wh	-	-
4519.440	Er	5	-	-	4515.938	Dy	2	-	-	4512.57	I	-	[30]	Bl
4519.3	bh Zr	20	-	L	4515.881	W	6	1	-	4512.564	Er	4	-	-
4519.290	Co I	40	-	-	4515.88	Tb	10 w	-	-	4512.54	Ho	2	1	Kn
4519.273	Th	6 w	-	-	4515.857	Ce	18	-	-	4512.490	Th	4	4	-
4519.223	U	2	3	-	4515.838	Zr	3	-	-	4512.393	U	2	3	-
4519.19	Cl II	-	[18]	Ks	4515.624	Ti I	20	2	-	4512.305	Sm	2	-	-
4519.171	W	12	3	-	4515.553	V I	6	5	-	4512.289	Nd	3	-	-
4519.115	Pr	3	-	-	4515.536	U	2	3	-	4512.282	Ca I	10	-	IWg
4519.1	bh Ca	3	-	L	4515.495	Cs II	-	[10]	Ot	4512.272	Pr	8	-	-
4519.071	Rb	-	10	Rr	4515.440	Cr	25	10	-	4512.205	Er	3	-	-
4519.031	Hf	1	8	-	4515.421	Zr I	3	-	-	4512.180	U	2	4	-
4518.968	Dy	2	1	-	4515.411	Ne I	-	[30]	Ps	4512.148	Mo	25	25	-
4518.889	Os	15	-	-	4515.382	Nd	5	-	-	4512.14	Eu	2	-	-
4518.697	Ti I	30	10	-	4515.345	Fe II	10	10	-	4512.129	Cb	2	3	-
4518.687	Pr	2	-	-	4515.331	Ir	8	1	-	4512.028	Ir	3	-	-
4518.68	Eu	8 w	5	Kn	4515.280	U	25	40	-	4511.903	Cr	80	100	-
4518.668	Mo	4 h	4 h	-	4515.185	Mo	15	15	-	4511.834	Sm II	100	100	-
4518.647	Th	2	2	-	4515.148	Yb	45	100	-	4511.823	Nd	50	10	-
4518.640	Er	40 w	1 h	-	4515.148	Re	8	-	-	4511.815	Pr	3	-	-
4518.628	Cr	6	-	-	4515.124	Th	3	-	-	4511.746	U	5 h	8 h	-
4518.590	U	1	3	-	4515.098	Sm	100	-	-	4511.715	Er	4 w	1 h	-
4518.57	Lu	300	40	Me	4515.036	Mo	5	8	-	4511.635	Ce	10	-	-
4518.538	Dy	6	4	-	4515.022	Ne I	-	[2]	Ps	4511.53	Eu	3 w	3	-
4518.440	Mo	5	5	-	4514.902	Os	5	-	-	4511.52	Tb	40	-	-
4518.294	Hf	10	4	-	4514.891	Ne I	-	[70]	Ps	4511.509	Ne I	-	[20]	Ps
4518.280	Ce	4	-	-	4514.826	Ru	5	-	-	4511.503	Ta	300	40 W	-
4518.208	Tb	2	-	-	4514.8	air	-	10	m	4511.455	Pr	5	-	-
4518.078	U	1	4	-	4514.80	Ne II	-	[15]	Brn	4511.432	V I	2	2	-
4518.032	Ti I	100	60	-	4514.751	Er	4 w	-	-	4511.37	Ne II	-	[50]	Bl
4518.017	Ce	12	-	-	4514.706	Sm	2	-	-	4511.349	Pr	4	-	-
4517.942	Er	2 w	-	-	4514.7	bh C	-	-	L	4511.34	Cd	5	-	Ps
4517.87	Tm	15	-	-	4514.573	U	1	2	-	4511.323	In I	5000 R	4000 R	-
4517.818	Ru I	60	-	-	4514.531	Cr I	30	8	-	4511.307	Sm	40	-	-
4517.779	Nd	2 h	-	-	4514.517	Gd	60	10	-	4511.30	Sn	200	-	Ar
4517.76	Eu	20 w	-	-	4514.50	Sb	-	[10]	Lg	4511.29	Ne II	-	[15]	Bn
4517.736	Ne I, II	-	[100]	IMe	4514.457	Ce	3	-	-	4511.290	Nd	25	-	-
4517.595	Pr	40 w	15 w	-	4514.407	Mo	8	10	-	4511.257	Pt I	2	1 h	-
4517.566	V	5	4	-	4514.373	Cr	10	8	-	4511.238	Mn	2	-	-
4517.530	Fe I	30	3	S	4514.317	W	6	1	-	4511.197	Ru I	25	-	-
4517.42	In	-	10	Sq	4514.299	Tb	15	-	-	4511.170	Ti	40	10	-
4517.409	Mo	12	8	-	4514.289	U	2	3	-	4511.170	Zr I	5	-	-
4517.372	Ir	4	-	-	4514.275	Re	15 h	-	-	4511.158	U	4	8	-
4517.370	W	9	2	-	4514.215	Pr	10 w	-	-	4511.091	Pr	3	-	-
4517.356	Eu	6	-	-	4514.193	V I	25	20	-	4511.089	Cb	5	15 h	-
4517.29	Ne	-	[15]	Bl	4514.189	Co I	60	2	-	4510.982	Ta	200 W	50 W	-
4517.250	Sm	4	-	-	4514.14	Pt II	2	5 h	m	4510.921	Ce	6	-	-
4517.230	U	3	10	-	4514.06	Br	-	[8]	Bl	4510.917	Er	2 w	-	-
4517.19	Tb	2	-	-	4514.060	Ce	4	-	-	4510.84	Al	-	6 h	Gn
4517.132	Mo	30	30	-	4514.058	W	4	-	-	4510.81	Ho	2	1	Kn
4517.109	Co I	300	6	-	4514.05	Te	-	[30]	Bl	4510.761	Ce	3	-	-
4517.075	Gd	3	1	Kn	4514.047	Eu	15	-	-	4510.733	A I	-	[1000]	I
4517.046	Th	4	3	-	4514.026	Yb	15 lw	-	-	4510.535	Th	30	20	-
4517.008	Ir	4 h	-	-	4514.006	Yt I	5	3	-	4510.386	Gd	10 h	10 h	-
4516.989	Gd	5	2	-	4513.809	Gd	3	-	-	4510.320	U	20	30	-
4516.96	Dy	6	4	m	4513.723	Pr	10	2	-	4510.210	Mn II	-	-	Cz
4516.955	Pr	5	-	-	4513.715	Ti I	3	1	-	4510.2	Rn	-	[6]	Ny
4516.95	Tm	3	-	Me	4513.690	Th	2	-	-	4510.170	Ne I	-	[15]	Ps
4516.938	Eu	4	-	-	4513.675	U	4	5	-	4510.166	Ce	4	-	-
4516.936	Ne I	-	[50]	Ps	4513.60	Dy	3	-	-	4510.160	Pr	200	125	-
4516.911	Cb	1	3	-	4513.581	Yt I	4	3	-	4510.097	Ru I	25	-	-
4516.893	Ru I	100	-	-	4513.474	Cb	-	3	-	4510.096	Os	2	-	-
4516.814	Er	2	-	-	4513.44	Br I	-	[100 I]	Ks	4510.082	Ce	2 h	-	-
4516.725	U	15	1	-	4513.391	Yb	8	1	-	4510.005	Cr	15	1	-
4516.645	Nd	2 h	-	-	4513.373	U	2	2	-	4509.97	Dy	2	-	-
4516.63	Re	80	-	m	4513.333	Nd	25	2	-	4509.968	Er	2 w	-	-
4516.60	Ca	-	8	Ad	4513.30	Re	300	-	-	4509.885	U	-	4 h	-
4516.55	Eu	2	2	Ed	4513.300	W	30	10	-	4509.87	A	-	[2 d]	Ms
4516.534	Er	2	-	-	4513.235	Th	3	-	-	4509.824	Nd	6	-	-
4516.531	Tb	2	-	-	4513.231	Pr	6	2	-	4509.738	Ti	2	1	-
4516.529	Ce	2	-	-	4513.216	Cr	10	-	-	4509.698	Ru	6	-	-
4516.461	Pr	8	3	-	4513.212	I II	-	[15]	Mu	4509.63	Ba II	-	[5]	Rs
4516.381	Nd	30	-	Kn	4513.20	Eu	20 w	-	m	4509.497	Ce	3	-	-
4516.38	La	-	5 hl	Me	4513.20	Cu I	2	1 h	Hs	4509.447	Er	2	-	-
4516.349	Nd	40	3	-	4513.138	Ce	3	-	-	4509.426	Nd	5	-	-

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R	
4509.388	Cu I	150	30	4506.527	Th	3	—	4502.85	Se	—	[25]
4509.381	Pr	4	2	4506.50	O	—	[15 h]	4502.8	bh Sc	3	—
4509.355	U	2	2 h	4506.418	Ce	15	—	4502.645	Ru	4	—
4509.351	W	6	1	4506.361	Ti	20	2	4502.600	Fe	2	2
4509.33	As	—	10	4506.346	Gd	80	5	4502.598	Dy	3	—
4509.286	V I	4	2	4506.223	U	6	12	4502.575	Ce	2	—
4509.286	Ta	60	2	4506.221	Gd	100	50	4502.52	Ne II	—	[2]
4509.262	Ce	4	—	4506.083	Dy	2	2	4502.455	U	1 h	2 h
4509.161	Er	2	—	4506.082	V I	3	2	4502.454	W	2	2
4509.143	Ce	12	—	4506.063	U	2	6	4502.440	Nd	4	—
4509.093	Gd	10	2	4506.051	Mo	20	20	4502.3547	Kr I	—	[600]
4509.048	Eu	4	—	4505.997	Cu II	1	50	4502.283	Pr	2	—
4509.04	Tb	30	—	4505.958	Mo	20	20	4502.27	N	—	[5]
4508.995	Gd	7	—	4505.951	Yt I	50	50	4502.264	Th	2	3
4508.926	Pr	4	1	4505.943	Er	40	5	4502.255	U	2	—
4508.80	Ca	—	4	4505.934	Ba	60	20	4502.223	Cr	8	—
4508.78	Er	2	—	4505.9	F	—	[2 d]	4502.220	Mn	125	40
4508.744	Cr	5	—	4505.89	Tb	3 d	—	4502.16	La II	—	10 hl
4508.729	Ce	5	—	4505.876	Pr	2	—	4502.144	Ce	2	—
4508.695	Eu	10 w	5 h	4505.844	La II	2	6 hl	4502.116	Eu	2	—
4508.675	Mo	—	5 h	4505.715	Ti I	3	1	4502.1	bh C	—	L
4508.651	Th	8 w	—	4505.703	Ir	10	—	4501.954	V I	20	15
4508.65	Tb	2	—	4505.596	Ce	3	—	4501.945	U	2	4
4508.561	Ru	15	—	4505.52	Tm	15	10	4501.934	Nd	4	—
4508.48	Rn I	—	[250]	4505.42	In	—	10	4501.835	Ce	2	—
4508.478	La II	3	2	4505.35	Tb	2	—	4501.828	Pr	20	1
4508.408	Cb	5	5	4505.340	K II	—	[30]	4501.827	Th	3	—
4508.370	Pr	8	2	4505.26	Eu	8 w	—	4501.808	Nd	50	8
4508.285	Fe II	40	30	4505.226	Th	5	—	4501.804	Er	4	—
4508.281	Ti I	3	1	4505.22	Lu	1	5	4501.788	Cr	15	6
4508.21	Ne II	—	[30]	4505.16	A	—	[2]	4501.73	Tb	2	—
4508.209	Mo	5	4	4505.125	Ce	6	—	4501.697	Ce	3	—
4508.170	Th	2	1	4505.096	Pr	2	—	4501.577	La I	5	—
4508.11	Dy	2	—	4505.072	Ir	10	—	4501.525	Cs II	—	[35]
4508.083	Ce	8	—	4505.047	Sm II	5	5	4501.498	U	4	—
4508.07	Br	—	[4]	4505.044	Nd	20	2	4501.461	Gd	10 h	—
4508.048	Ti I	5	1	4505.0	bh Ca	4	—	4501.444	V I	5	—
4508.042	Th	4	—	4505.00	Ca I	2	3 h	4501.368	Sm II	5	9
4508.039	Ru	12	—	4504.962	Gd	3	—	4501.367	Pr	2	—
4508.026	Zr	3	—	4504.897	Mo	2	4	4501.290	Mo	25	25
4508.01	Er	2	—	4504.87	Tm	30	—	4501.28	Tb	4	—
4507.99	Re	30 w	—	4504.857	W	30	10	4501.274	Ti II	60	100
4507.981	Nd	8	—	4504.849	Fe I	6	—	4501.213	Pr	4	—
4507.96	Tb	2	—	4504.725	U	3	5	4501.2	P	—	[15]
4507.92	As II	—	30	4504.721	Th	6 w	—	4501.112	Cr	40	30
4507.83	Rn	—	[80]	4504.591	Pr	20	2	4501.095	Ce	6	—
4507.786	U	—	2	4504.57	Tb	3	—	4501.02	Tb	2	—
4507.765	Pr	4	5	4504.539	Eu	4	—	4500.977	Xe I	—	[500]
4507.756	Ce	3	—	4504.42	Re	2 h	—	4500.949	In II	—	[50]
4507.675	Gd	6	6	4504.27	Cl II	—	[20]	4500.928	Ir	8	—
4507.639	Ir	4	—	4504.170	U	—	4 h	4500.923	Nd	5	—
4507.59	Se II	—	[20]	4504.167	W	12	4	4500.877	Gd	3	—
4507.58	N II	—	[10]	4504.10	Tm	5	—	4500.770	In II	—	[30]
4507.55	P	—	[30]	4504.063	Ce	2	—	4500.752	Er	20	20
4507.5	Cu I	50 w	30 wh	4504.06	P	—	[30]	4500.729	Os	5	—
4507.45	A I	—	[2]	4504.040	Os	4	—	4500.678	Gd	5	2
4507.443	Th	6 w	—	4503.908	Cr	2	—	4500.627	In II	—	[15]
4507.424	Eu	6	—	4503.869	Mn	60	5	4500.57	Se II	—	[10]
4507.405	La I	4	3	4503.847	Ce	3	—	4500.552	Co I	5	—
4507.402	Er	3	—	4503.803	Gd	3	—	4500.523	Mo	—	5 h
4507.385	Sm	2	—	4503.784	Rh I	30	10	4500.518	Pr	20	2 w
4507.343	Ce	2	—	4503.777	Ti I	15	5	4500.341	Ce	8	—
4507.277	Zr I	3	—	4503.772	Er	2	—	4500.295	Cr	50	30
4507.127	Ir	2	—	4503.742	Pr	10	—	4500.219	La I	15	4
4507.119	Zr I	20	—	4503.72	Rn	—	[20]	4500.182	Ne I	—	[50]
4507.11	Xe	—	[3 wh]	4503.677	U	6	3	4500.102	Pr	3	—
4507.099	U	2	1	4503.613	Yb	12	—	4500.03	Ti II	—	[8]
4507.065	Gd	4 h	—	4503.58	Tb	6	—	4499.985	Th	12	6
4507.052	Ce	3	—	4503.558	Mo	—	25 w	4499.90	Ca	—	10 h
4507.03	Re	40 w	—	4503.47	Tm	5	—	4499.843	Ne I	—	[5]
4506.963	Ce	3	—	4503.43	Eu	3 W	—	4499.802	Cb	5	10
4506.957	Dy	4	4	4503.418	Ob	2	5	4499.800	Pr	5 w	—
4506.948	Pr	10	2	4503.381	Sm	4	2	4499.752	Ce	6	—
4506.941	Gd	50	20	4503.353	Ce	3 h	—	4499.650	Hf	15	6
4506.913	Sb II	—	12	4503.317	Th	6 wh	—	4499.643	U	1	2
4506.853	Cr	30	30	4503.282	Ir	2	—	4499.58	I	—	[35]
4506.834	Cs II	—	[10]	4503.273	Pr	15 w	—	4499.545	Pr	5 w	—
4506.726	Mn	8	—	4503.252	Dy	4	4	4499.511	Ce	4	—
4506.709	Sb	—	3	4503.24	Tb	2	—	4499.484	Sm II	100	100
4506.705	Cs	—	[15]	4503.21	Gd	5	2	4499.47	Tb	3	—
4506.680	Rh I	3	1	4503.157	W	3	1	4499.444	Mo	20	20
4506.673	Mo	25	25	4503.045	Cr	10	1	4499.404	Er	6	—
4506.632	Ce	3	—	4503.043	Ob	10	20	4499.377	Pr	10 w	—
4506.582	Nd	50	3	4502.95	A	—	[20]	4499.282	Nd	15	2
4506.578	V I	6	4	4502.856	Pr	10	—	4499.269	Cr	4	—

4499.2—4489.2 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
4499.261	Co I	3	-	-	4495.82	Dy	2	-	-	4492.343	Ce	3 h	-	-
4499.25	Dy	2	-	-	4495.72	I II	-	[10]	Mu	4492.328	W	12	5	-
4499.246	U	1	4	-	4495.622	U	-	3	-	4492.312	Cr	30	15	-
4499.229	Ce	4	-	-	4495.529	Er	4	-	-	4492.301	Sm II	3	-	-
4499.17	P II	-	[150]	I	4495.49	Th	3	2	-	4492.239	Th	8	5	-
4499.105	Sm	10	10	-	4495.462	Cb	-	3	-	4492.158	Ir	35	2	-
4499.052	La I	10	-	-	4495.387	Ce	18	2	-	4492.132	Ne I	-	[5]	Ps
4499.000	Ne I, II	-	[20]	Ps	4495.347	Ir	100	3	-	4492.076	Co I	5	-	-
4498.992	Pr	5 w	-	-	4495.34	Se II	-	[20]	Bt	4492.066	Mo	3	3	-
4498.96	Tb	3	-	-	4495.312	W	20	6	-	4492.056	Nd	5	-	-
4498.950	Th	12	3	-	4495.275	Cr	15	2	-	4492.038	Gd	2	-	-
4498.897	Mn	150	40	-	4495.247	Th	3	3	-	4491.882	Th	2	1	-
4498.85	Lu	10	1	Me	4495.15	Br	-	[4]	Bl	4491.858	Cr	50	4	-
4498.793	Sb	-	2	Sp	4495.123	Sm II	-	10	-	4491.838	Ne I	-	[50]	Ps
4498.761	Pt I	100	5 h	-	4495.1	bh C	-	-	L	4491.78	Tb	3	-	-
4498.751	La II	3	4 h	-	4495.03	Tb	3	-	-	4491.771	Ne I	-	[80]	Ps
4498.741	Nd	2	-	-	4495.008	Ti	20	5	-	4491.756	La I	8	3	-
4498.730	Cr	30	15	-	4494.969	Ta	50	2	-	4491.749	Yt I	4	-	-
4498.633	Pr	4	-	-	4494.966	Th	5	3	-	4491.738	Er	10	-	-
4498.59	Te	-	[50]	Bl	4494.935	Zr I	3	-	-	4491.682	Ru	20	-	-
4498.55	A II	-	[10]	Rt	4494.858	Gd	5	-	-	4491.678	Cr I	25 d	1	-
4498.48	Dy	3	2	Ed	4494.758	Nd	5	-	-	4491.656	Mo	5	6	-
4498.467	W	12	4	-	4494.755	Co I	100	-	-	4491.651	Mn	50	5	-
4498.426	Er	5	-	-	4494.75	U	4	2	-	4491.644	Nd	6	2	-
4498.415	Ce	3 h	-	-	4494.706	La I	10	-	-	4491.560	Zr I	4	-	-
4498.389	Re	8	-	-	4494.67	N	-	[25]	Du	4491.478	Pr	3	-	-
4498.295	Pr	5 w	-	-	4494.59	As II	-	200	Ro	4491.443	Th	3	-	-
4498.294	Gd	100	-	-	4494.568	Fe I	400	150	S	4491.435	U	2	4	-
4498.265	U	2	2	-	4494.568	Cb	10	5	-	4491.406	Fe II	2	2	-
4498.145	Ru I	125	40	-	4494.507	W	20	12	-	4491.358	Ir	40	2 wh	-
4497.915	Nd	15	8	-	4494.47	Te	-	[100]	Bl	4491.32	Dy	2	-	-
4497.904	Th	3	-	-	4494.416	Zr II	2	5	-	4491.290	Ce	4	-	-
4497.890	U	4	-	-	4494.40	Tb	2	-	-	4491.282	Mo	40	30	-
4497.88	S II	-	[5]	Hn	4494.342	Pr	4	-	-	4491.27	Tb	2	-	-
4497.849	Ce	30	4	-	4494.34	Eu	4	-	Kn	4491.264	Gd	2	-	-
4497.730	Ti I	15	3	-	4494.266	Na I	60	-	Da	4491.23	O II	-	[30 h]	Mh
4497.724	Na I	70	-	Da	4494.223	Ce	20	3	-	4491.164	V I	6	5	-
4497.714	Mn	2	-	-	4494.193	Pr	35 w	-	-	4491.137	Pr	3	-	-
4497.703	V I	2	2	-	4494.102	Re	2 h	-	-	4491.08	Cl I	-	[8]	Ks
4497.7	Ho	2	-	Kn	4494.090	Mo	5	5	-	4491.032	Dy	3 h	-	-
4497.69	W	7	2	-	4493.972	W	15	7	-	4491.02	Tb	7	-	-
4497.669	Pd I	3	-	-	4493.967	Yb	4	10	-	4491.001	Ir	2	-	Ab
4497.613	Ce	6 s	-	-	4493.949	Rb II	-	8	Rr	4490.99	A II	-	[20]	Rt
4497.55	Gd	2	-	Kn	4493.904	U	1	2 h	-	4490.835	U	18	25	-
4497.54	I	-	[15]	Bl	4493.9	bh C	-	-	L	4490.803	V I	25	20	-
4497.53	Eu	4 W	-	Kn	4493.828	Er	5 wd	-	-	4490.774	I II	-	[10]	Mu
4497.516	U	2	1 h	-	4493.809	La I	5	-	-	4490.773	Nd	2	-	-
4497.397	V I	15	10	-	4493.8	bh Zr	25	-	L	4490.77	Ti II	-	[25]	El
4497.380	Nd	4 wh	-	-	4493.709	Pr	20	4	-	4490.765	Fe I	40	1	-
4497.328	Gd	10	5	-	4493.699	Ne I	-	[50]	Ps	4490.697	Ti I	4	-	-
4497.30	Cl II	-	[18]	Ks	4493.693	Ce	3	-	-	4490.64	Tb	12	-	-
4497.272	Pr	2	-	-	4493.660	Cs	-	[10]	Sv	4490.595	Hf II	5	15	-
4497.259	Nd	10	5	-	4493.639	Ba I	60	5	-	4490.590	Er	2	-	-
4497.133	Gd	150	80	-	4493.53	Ti II	1	8	-	4490.555	Cr I	15 h	-	-
4497.005	La II	2	-	-	4493.528	Mo	-	10 h	-	4490.541	Ni I	3	-	-
4496.989	Mn II	-	[4]	Cz	4493.420	Nd	12	8	-	4490.53	Lu	2	-	Me
4496.971	Zr II	10	10	-	4493.418	Ce	4	-	-	4490.465	Ce	4	-	-
4496.92	Tb	3	-	-	4493.340	Th	12	4	-	4490.43	Br I	-	[25]	Ks
4496.862	Cr I	200	200	-	4493.321	Ce	3	-	-	4490.389	Pr	8 w	-	-
4496.86	I II	-	[3]	Ke	4493.187	Pt	2	1	-	4490.322	Th	3	1	-
4496.846	V I	40	30	-	4493.119	Pr	25 w	-	-	4490.309	Co I	2	-	-
4496.793	Ru	6	-	-	4493.111	La I	10	-	-	4490.235	Ru I	25	-	-
4496.758	Cs	-	[15]	Sv	4493.108	Ne I	-	[5]	Ps	4490.192	Mo	20	20	-
4496.65	Tm	2	2	-	4493.108	Tb	100	-	-	4490.171	Er	5	-	-
4496.631	Mn	40	5	-	4493.070	Er	3	-	-	4490.087	Fe I	40	10	-
4496.620	Gd	4	4	-	4493.044	U	6	8	-	4490.081	Mn	100	25	-
4496.52	I	-	[8]	Bl	4492.961	Cb	1	50 h	-	4490.00	Cl II	-	[50]	Ks
4496.496	Ta	100	2	-	4492.951	Ce	6	-	-	4489.964	W	3	-	-
4496.446	Re	20 d	-	-	4492.927	Pr	12	-	-	4489.88	Kr II	-	[400 hl]	Me
4496.429	Pr	200	125	-	4492.892	Ru	7	-	-	4489.87	Al II	-	[2]	Sy
4496.41	Dy	3	-	Kn	4492.858	U	2	3	-	4489.864	Ir	2	-	Ab
4496.4	bh Yt	5	-	Me	4492.81	Hg II	-	[30]	Ps	4489.821	Ce	2	-	-
4496.383	Er	6	-	-	4492.764	Ce	3	-	-	4489.76	Tb	5	-	-
4496.323	Th	12	10	-	4492.730	Co	3	-	m	4489.742	Gd	3	-	-
4496.268	W	4	-	-	4492.689	Ne I	-	[15]	Ps	4489.741	Fe I	100	12	S
4496.25	Tb	2	-	-	4492.68	I II	-	[2]	Mu	4489.72	Tm	40	6	Me
4496.245	Ti I	6	-	-	4492.546	Ti I	15	4	-	4489.530	Ce	5	-	-
4496.231	Ce	10	-	-	4492.474	Nd	8	3	-	4489.527	Th	3	1	-
4496.2	bh Zr	30	-	L	4492.469	Rh I	30	8	-	4489.479	Pd I	12	2	-
4496.149	Ti I	60	60	-	4492.427	Pr	25	2 w	-	4489.471	Cr	25	15	-
4496.131	U	2	3	-	4492.422	Yt I	3	-	-	4489.47	O II	-	[10 h]	Mh
4496.11	Mo	2	3	-	4492.412	Ne I	-	[30]	Ps	4489.418	Ir	6	-	-
4496.065	V I	30	25	-	4492.412	Er	7	-	-	4489.33	Te	-	[30]	Bl
4496.032	Ir	40	2	-	4492.40	N	-	[40]	Du	4489.317	Ta	-	10 h	-
4495.966	Fe I	7	-	-	4492.40	Eu	4 w	-	-	4489.28	Mo	-	5 h	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4489.185	Fe II	2	2	-	-	4485.544	Pr	40	5 w	-	-	4481.85	Kr II	-	-	[50 whl]	Me
4489.093	Ti I	100	40	-	-	4485.522	Ce	15	1	-	-	4481.83	A II	-	-	[80]	Rt
4489.073	U	3	5	-	-	4485.479	Gd	5	3	-	-	4481.645	Pt I	2	1 h	-	-
4489.021	W	12	3	-	-	4485.445	Zr II	3	-	-	-	4481.637	Th	6	3	-	-
4488.999	Mo	15	12	-	-	4485.311	Pr	4	-	-	-	4481.637	Ce	3	-	-	-
4488.969	Ba I	80	3	-	-	4485.29	P	-	[50]	Gu	-	4481.46	Ti II	-	-	[5]	El
4488.96	Er	5 w	1	m	-	4485.215	U	6	12	-	-	4481.447	Re	15	-	-	-
4488.918	Fe I	3	1	-	-	4485.148	Eu II	40	2	-	-	4481.443	Cb	2	3	-	-
4488.889	V I	60 h	30 h	-	-	4485.098	Ti I	8	-	-	-	4481.431	Cr	10	-	-	-
4488.809	Ce	6	-	-	-	4484.969	Mo	30	30	-	-	4481.410	Pr	30	4	-	-
4488.680	Th	25	12	-	-	4484.959	Ca	-	5	-	-	4481.327	Mg II	100	-	-	Fl
4488.601	Pr	9	-	-	-	4484.948	Nd	5	2	-	-	4481.31	Tb	2	-	-	-
4488.601	Os	60	-	-	-	4484.883	Pr	4	-	-	-	4481.284	W	15	6	-	-
4488.60	Xe	-	[2 wh]	Hu	-	4484.824	Sm II	2	2	-	-	4481.276	Mo	10	8	-	-
4488.560	Gd	4	-	-	-	4484.819	Ce	30	3	-	-	4481.273	Er	20	-	-	-
4488.557	Dy	4	2	-	-	4484.80	Tb	2	-	-	-	4481.27	Tm	400	50	-	Me
4488.545	I II	-	[15]	Ke	-	4484.763	Os	100	1	-	-	4481.262	Ti I	100	60	-	-
4488.415	Gd	25	-	-	-	4484.714	Pr	2	-	Kn	-	4481.198	La II	4	2 h	-	-
4488.392	Ru I	25	-	-	-	4484.710	Gd	25	10	-	-	4481.198	Ir	4	-	-	Ab
4488.322	Th	3	-	-	-	4484.695	Pt I	5	1 h	-	-	4481.183	Th	3	2	-	-
4488.317	Ti II	10	125	m	-	4484.683	Cr	6	-	-	-	4481.16	Mg	-	50	-	-
4488.285	Yb	9	-	-	-	4484.67	Eu	8 w	-	Kn	-	4481.068	Gd	70	100	-	-
4488.283	Eu	12 w	2	-	-	4484.57	Ho	4	2	Ex	-	4481.0	Ho	-	3 h	-	Ex
4488.25	Au I	40	30 l	-	-	4484.55	Ti I	3	-	-	-	4480.970	Nd	25	-	-	-
4488.233	U	2	1	-	-	4484.516	Sm	2	-	-	-	4480.95	I	-	[25]	-	Ke
4488.22	Kr	-	[3 wh]	Me	-	4484.515	Co I	60	-	-	-	4480.934	Ta	200 w	10 h	-	-
4488.19	Te	-	[30]	Bl	-	4484.504	U	2	3	-	-	4480.92	Tb	4	-	-	-
4488.173	Pr	40	10	-	-	4484.502	La II	10 h	10 h	-	-	4480.868	Er	2	-	-	-
4488.17	O II	-	[15 h]	Mh	-	4484.5	bh Sr	3	-	L	-	4480.86	Xe II	-	-	[200 whl]	Hu
4488.16	Tb	12	-	-	-	4484.477	Gd	5	5	-	-	4480.849	Ce	2	-	-	-
4488.138	Ce	2	-	-	-	4484.452	Er	8	-	-	-	4480.823	Ne I	-	-	[15]	Pa
4488.132	Fe I	7	-	-	-	4484.446	Yt I	2	-	-	-	4480.822	Th	25	10	-	-
4488.093	Ne I	-	[300]	IMe	-	4484.43	Yb	-	3 h	Me	-	4480.80	Ti II	-	-	[5]	El
4488.051	Cr	25	15	-	-	4484.41	Ca	-	3	Ad	-	4480.795	Sm	6	2	-	-
4487.871	Ce	6	-	-	-	4484.37	Dy	5	2	Kn	-	4480.769	Zr I	3	-	-	-
4487.821	Pr	40	3 w	-	-	4484.292	Th	5	3	-	-	4480.695	Dy	4	2	-	-
4487.74	Tb	3	-	-	-	4484.225	Fe I	125	40	-	-	4480.688	Pr	3	-	-	-
4487.618	Nd	8	3	-	-	4484.189	W	35	20	-	-	4480.590	Ti I	40	15	-	-
4487.500	Th	20	10	-	-	4483.948	Ir	2	-	-	-	4480.574	U	2	3	-	-
4487.489	Ce	3	-	-	-	4483.927	Co I	100	-	-	-	4480.570	Ni I	3	-	-	-
4487.48	Hg	-	[300]	Ps	-	4483.904	Ru	10	-	-	-	4480.507	Sr I	10 h	-	-	[Sn]
4487.466	Yt I	8	-	-	-	4483.897	Ce	40	10	-	-	4480.464	Ce	3	-	-	-
4487.448	W	3	-	-	-	4483.831	Rh	5	2	-	-	4480.448	Ru	60	-	-	-
4487.36	In	-	10	-	Sq	4483.788	Ir	3	-	-	-	4480.359	Cu I	200	20	-	-
4487.30	I II	-	[10]	Mu	-	4483.756	U	3	6	-	-	4480.346	U	5	6	-	-
4487.280	Yt I	6	-	-	-	4483.662	Er	3	-	-	-	4480.328	Ce	3	-	-	-
4487.273	Er	20	1	-	-	4483.66	P II	-	[30]	Gu	-	4480.307	Sm	10	7	-	-
4487.27	Yb	2	10	Me	-	4483.586	Co I	20 h	-	-	-	4480.278	Yb	7	2	-	-
4487.169	Ce	3	-	-	-	4483.530	W	4	-	-	-	4480.275	Pr	5	-	-	-
4487.047	Mo	25	25	-	-	4483.491	Pr	30	2	-	-	4480.263	Cr	3	1	-	-
4487.033	Pr	5	-	-	-	4483.466	U	6	1 h	-	-	4480.24	Er	3	1	-	-
4486.995	Re	8	-	-	-	4483.424	S II	-	[100]	Hn	-	4480.15	Lu	3	-	-	Me
4486.909	Ce	40	15	-	-	4483.41	Tb	4	-	-	-	4480.144	Fe I	10	2	-	-
4486.908	Gd	100	15	-	-	4483.347	Ce	8	1	-	-	4480.133	Pr	5	-	-	-
4486.904	Th	4	-	-	-	4483.339	Th	4	-	-	-	4480.11	Eu	15 W	1	-	Kn
4486.812	Ru	6	-	-	-	4483.339	Gd	80	125	-	-	4480.06	Tb	4	-	-	-
4486.71	Tb	2	-	-	-	4483.29	Hf II	-	5	Me	-	4480.038	V I	25	20	-	-
4486.710	Co I	50	1	-	-	4483.190	Ne I	-	[150]	IMe	-	4479.979	Ce	6	-	-	-
4486.682	Er	6	-	m	-	4483.083	Pr	25	2	-	-	4479.86	Kr II	-	-	[5 whl]	Me
4486.66	S II	-	[35]	Hn	-	4483.053	Ce	3	-	-	-	4479.822	La I	10	-	-	-
4486.648	Hf II	3	15	-	-	4482.878	Cr	25	12	-	-	4479.808	Os	80 l	1	-	-
4486.642	Th	10	6	-	-	4482.787	Ce	4 h	-	-	-	4479.74	I	-	-	[25 h]	Bl
4486.59	Re	2	-	m	-	4482.752	Fe I	20	2	-	-	4479.74	P	-	-	[70]	Gu
4486.588	Pr	3	-	-	-	4482.72	Tb	2	-	-	-	4479.705	Ti I	70	35	-	-
4486.51	Tb	2	-	m	-	4482.694	Pr	8 w	-	-	-	4479.622	Fe I	15	2	-	-
4486.404	Ce	3 h	-	-	-	4482.693	Ti I	40	20	-	-	4479.618	Pr	35	-	-	-
4486.364	Gd	25	80	-	-	4482.678	U	8	10	-	-	4479.609	W	4	-	-	-
4486.363	Zr I	3	-	-	-	4482.601	Er	2	-	-	-	4479.50	Dy	2	-	-	Ed
4486.311	U	4	6	-	-	4482.591	Ce	3 h	-	-	-	4479.44	Ca	-	2	-	Ad
4486.296	Sm	9	20	-	-	4482.503	Zr I	3	-	-	-	4479.438	U	2	4 h	-	-
4486.242	Dy	5	2	-	-	4482.48	S	-	[8]	Hn	-	4479.432	Ce	4	-	-	-
4486.15	Tm	2	-	Me	-	4482.44	Yb	20	2	m	-	4479.410	Ru	15	-	-	-
4486.132	Hf II	25	30	-	-	4482.40	Tb	2	-	Ed	-	4479.399	Mn	60	-	-	-
4486.056	La I	15	4	-	-	4482.33	Dy	4	2	Kn	-	4479.359	Ce	40	18	-	-
4486.02	Tb	2	-	-	-	4482.258	Fe I	150	70	-	-	4479.358	Er	2 w	-	-	-
4485.977	Pr	5	-	-	-	4482.258	U	1	2	-	-	4479.31	A I	-	-	[5]	Ma
4485.952	Nd	12	3	-	-	4482.172	Fe I	150	70	-	-	4479.203	Ce	4	1	-	-
4485.95	Xe II	-	[10]	Hu	-	4482.1	Rb	-	[4]	Dr	-	4479.186	W	4	-	-	-
4485.796	Th	10	5	-	-	4482.034	Ru I	12	-	-	-	4479.161	Th	4	3	-	-
4485.790	Mo	4	4	-	-	4482.032	Ir	5	-	-	-	4479.098	Pr	3	-	-	-
4485.77	Te	-	[30]	Bl	-	4482.03	Er	2	2 h	Ed	-	4479.041	Mo	3	5	-	-
4485.680	Fe I	50	2	-	-	4482.02	Cl II	-	[10]	Ks	-	4479.00	Yt I	2	-	-	-
4485.67	Tb	5	-	-	-	4481.99	Dy	3	-	-	-	4478.872	Cr	3	-	-	-
4485.59	Eu	3 w	1	-	-	4481.904	Ce	5	-	-	-	4478.812	Gd	80	-	-	-
4485.570	Sm	4	1	Kn	-	4481.893	Nd	20	-	-	-	4478.73	Te	-	-	[800]	Bl

4478.6—4468.9 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
4478.658	Sm	100	100	—	4475.26	P II	—	[150 I]	Gu	4471.992	Eu	30 w	2	—
4478.657	Co I	5	—	—	4475.26	Tb	4	—	—	4471.932	Er	2 w	—	—
4478.64	I I	—	[15]	Mu	4475.25	Mo	1	3	—	4471.818	Co	5	—	—
4478.638	Pr	3	—	Kn	4475.235	Th	5 h	2	—	4471.81	W	4	—	—
4478.56	Tb	2	—	m	4475.165	Sm II	10	10	—	4471.773	V I	6	3	—
4478.525	Nd	4	—	—	4475.131	Ne I, II	—	[5]	Ps	4471.773	Th	5	4	—
4478.503	W	4	2	—	4475.080	Re	30	—	—	4471.745	Pr	8	—	—
4478.476	Ir	200	10	—	4475.02	Se II	—	[12]	Bt	4471.72	Tb	12	—	—
4478.4	Eu	3 w	—	Kn	4475.00	Kr II	—	[800 hs]	Me	4471.681	He I	—	[7]	Ps
4478.387	Re	40 w	—	—	4474.9	bh Zr	8	—	L	4471.658	Mo	20	20	—
4478.321	Co I	100	3	—	4474.865	Ce	4	—	—	4471.65	Pt	—	2 h	—
4478.013	Ru	7	—	—	4474.854	Ti I	80	30	—	4471.64	Eu	4	2	—
4477.991	Pr	2	—	—	4474.840	Pr	9	1	—	4471.633	Ce	6	—	—
4477.99	Re	40 w	—	m	4474.836	U	3	3	—	4471.55	Lu	7	—	Me
4477.989	Ce	8	—	—	4474.834	Os	2	—	—	4471.550	Co I	100	4	—
4477.982	Cr	5	—	—	4474.78	Tb	4	—	Ed	4471.543	Dy	2 h	—	—
4477.92	O II	—	[10 h]	Mh	4474.77	A II	—	[20]	Rt	4471.52	Ne II	—	[30]	Bn
4477.885	Nd	15	—	—	4474.718	Nd	5	1	—	4471.5	bh Zr	40	—	L
4477.839	W	5	7	—	4474.714	V I	25	20	—	4471.477	He I	—	[100]	IMr
4477.83	Tb	5	—	Ed	4474.693	Ce	12	1	—	4471.43	As II	—	10	Ro
4477.773	Sm	3	1	—	4474.666	W	4	—	—	4471.428	Pr	10 d	—	—
4477.75	Br I	—	[200 W]	Ks	4474.653	Mo	80	—	—	4471.412	Nd	15	5	—
4477.74	N II	—	[5]	Fl	4474.621	Cb	—	5 h	—	4471.350	V I	20	8	—
4477.710	U	20	25	—	4474.605	Eu	2 W	—	—	4471.303	Gd	50	—	—
4477.69	Er	4	1	m	4474.60	As	—	200	Ro	4471.3	bh La	10	—	Me
4477.646	Re	3	—	—	4474.564	Mo	125	125	—	4471.29	W	4	—	—
4477.63	Ho	3	3	Kn	4474.564	U	2 h	2 h	—	4471.287	Cb	20	30	—
4477.630	Ce	4	—	—	4474.543	La I	4	—	—	4471.262	Ir	3	—	—
4477.510	Cr	5	—	—	4474.498	Er	4	—	—	4471.240	Ce	35	8	—
4477.497	Dy	2	2	—	4474.47	Tb	2	—	—	4471.240	Ti I	100	40	—
4477.493	Sm	2	2	—	4474.463	Pr	20	—	—	4471.2	bh La	3	—	Me
4477.461	U	3	6	—	4474.138	Gd	150	150	—	4471.17	Tb	3	—	—
4477.452	Nd	15	5	—	4474.12	Tb	2	—	—	4471.162	U	3	—	—
4477.444	Yt I	9	—	—	4474.102	Eu	5 W	—	—	4471.051	Mo	2	4	m
4477.381	W	4	—	—	4474.078	Th	10	6	—	4471.029	Ru	7	—	—
4477.354	Ce	2	—	—	4474.045	V I	30	20	—	4470.971	Ne I	—	[5]	Ps
4477.259	Pr	125	30 w	—	4474.035	W	12	5	—	4470.965	Nd	8 d	4 d	—
4477.238	Co I	30 wh	—	—	4474.029	La II	3	20	—	4470.90	Xe II	—	[15]	Hu
4477.218	Ce	4	—	—	4473.928	Ru I	100	—	—	4470.886	Sm	60	60	—
4477.179	Eu	12 W	—	—	4473.888	Yt	3	—	—	4470.861	Ti II	12	25	—
4477.166	W	4	—	—	4473.85	Xe	—	[2 h]	Hu	4470.753	W	4	—	—
4477.16	Mo	3	4	—	4473.835	Pr	30	6	—	4470.689	Nd	10	—	—
4477.12	Bi II	—	10 w	Om	4473.782	Cr I	25	1	—	4470.575	Pr	4	—	—
4477.053	Cr I	20	—	—	4473.70	Tb	3	—	—	4470.559	Zr I	10	—	—
4476.995	Ce	3 h	—	—	4473.661	Ce	2	—	—	4470.540	Ce	4	—	—
4476.97	Tb	4	—	Ed	4473.590	Pd I	60	6	—	4470.483	Ni I	15	20	—
4476.952	Yt I	10	—	—	4473.58	Ho	3	2	Ex	4470.480	Sm	2	1	—
4476.70	Se II	—	[10]	Bl	4473.546	Dy	2	—	—	4470.475	Ir	4	—	—
4476.631	Dy	2	2	—	4473.515	Ta	3	10	—	4470.430	Gd	5	—	—
4476.540	W	4	—	—	4473.500	Er	10	1	—	4470.430	Pr	5 h	—	—
4476.510	Ce	3	—	—	4473.498	Pr	10	—	—	4470.36	Tb	2	—	—
4476.477	U	8	6	—	4473.492	U	2	3	—	4470.311	Zr I	5	—	—
4476.429	Tb	2	—	Kn	4473.461	Pt I	2	2	—	4470.138	Mn	80	40	—
4476.37	Yt	2	—	Me	4473.44	I II	—	[80]	Ke	4470.02	Tm	2	—	—
4476.3	Pb II	—	[3]	Ea	4473.323	Pr	10	—	—	4470.01	Br I	—	[2]	Ks
4476.28	Tb	3	—	—	4473.283	Gd	10	10	—	4469.96	S	—	[8 h]	Ms
4476.144	Gd	100	—	Ab	4473.241	Re	3 h	—	—	4469.850	Ce	4	—	—
4476.079	Ag I	40	8	—	4473.182	Mo	30	30	—	4469.837	Cr	3	—	—
4476.05	I II	—	[60]	Mu	4473.138	Ce	3	—	—	4469.73	Tb	10 w	—	—
4476.022	Fe I	500	300	—	4473.08	Os	3	—	—	4469.718	W	5	1	—
4475.974	Ce	3	—	—	4473.012	Sm II	150	150	—	4469.713	Cb	12	15	—
4475.886	V I	6	2	—	4472.926	Pr	30	10	—	4469.710	V I	20 h	12 h	—
4475.834	Nd	4	—	—	4472.83	Tb	4	—	—	4469.66	Eu	6 W	—	Kn
4475.82	Tb	3	—	—	4472.82	B II	—	4	En	4469.655	Pr	9	—	—
4475.78	Eu	6 W	—	—	4472.80	Tm	5	—	—	4469.650	Sm	15	15	—
4475.712	Yt I	7	—	—	4472.792	Mn	100	25	—	4469.555	Co I	300	5	—
4475.697	Pr	6	—	—	4472.781	Yt	2	—	—	4469.528	Th	5	1	—
4475.69	As	—	30	Ro	4472.77	Dy	2	—	Ed	4469.518	Ce	2	—	—
4475.681	U	4	5	—	4472.721	Fe	10	1	—	4469.516	Rb II	—	10	Rr
4475.658	V	—	10 h	—	4472.718	Ce	15	3	—	4469.41	O II	—	[40]	Mh
4475.656	Ne I	—	[100]	IMe	4472.62	Br I	—	[125 I]	Ks	4469.4	bh Zr	30	—	L
4475.650	Ce	2	—	—	4472.571	Mo	5	5	—	4469.38	Mo	2	3	—
4475.630	W	4	1	—	4472.533	Cb	10	15	—	4469.380	Fe I	200	100	—
4475.618	Mo	25	25	—	4472.519	W	6	1	—	4469.37	Cl I	—	[12]	Ks
4475.566	Nd	12	4	—	4472.434	Yb	7 I	—	—	4469.328	U	12	1	—
4475.544	Er	20	1	—	4472.416	Sm II	100	100	—	4469.322	Cb	10 h	5 h	—
4475.518	Ti I	12 h	1 h	—	4472.335	U	50	80	—	4469.261	Nd	12	10	—
4475.382	Ce	2	—	—	4472.245	Th	10	5	—	4469.238	Ce	2	—	—
4475.375	Pr	8	—	—	4472.19	Yb	—	2	Me	4469.185	U	2	5	—
4475.345	Cr I	40	6 h	—	4472.152	Sm II	2	2	—	4469.160	Ti II	5 h	1	—
4475.330	Ru I	10	—	—	4472.082	Ce	3	—	—	4469.12	Tb	5	—	m
4475.296	Ce	4	—	—	4472.08	B II	—	4	En	4469.09	Cs	—	[2]	Sv
4475.28	Cl II	—	[12]	Ks	4472.045	Mo	20	15	—	4469.084	Nd	8	2	—
4475.279	Cb	2 h	5 h	—	4472.004	Th	5	1	—	4469.027	Pr	8	2	—
4475.277	U	4	5	—	4472.00	Tm	2	—	Me	4468.964	La I	10	—	—

Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R
4468.91	Ne II	4	-	[70]	Bn	4465.831	Re	6	-	-	-	4462.363	V I	20	9	-	-
4468.895	U	4	6	-	-	4465.810	Ti I	100	40	-	-	4462.330	U	15	18	-	-
4468.787	Zr I	3	-	-	-	4465.809	Co I	5	-	-	Kb	4462.302	Ce	4	-	-	-
4468.759	V I	12	9	-	-	4465.809	Gd	5	-	-	-	4462.287	Os	8	1	-	-
4468.712	Pr	125	100	-	-	4465.729	U	2	2	-	-	4462.20	Tb	20 W	-	-	-
4468.649	Cr	3	-	-	-	4465.70	Tb	4	-	-	-	4462.19	Xe	-	-	[500 whl]	Hu
4468.626	Ce	4	-	-	-	4465.651	Ne I	-	[50]	-	Ps	4462.14	Eu	5 w	-	-	Kn
4468.495	Ti II	80	150	-	-	4465.601	Nd	20	10	-	-	4462.094	Ti I	10	1	-	-
4468.365	Cr I	5	-	-	-	4465.499	V I	15	7	-	-	4462.037	Ce	3	-	-	-
4468.322	Th	2	-	-	-	4465.482	Ru	15	-	-	-	4462.022	Mn	40	60	-	-
4468.318	U	4	4	-	-	4465.45	O II	-	[50]	-	Mh	4461.92	As	-	10	-	Ro
4468.276	Mo	25	25	-	-	4465.438	Ce	6	-	-	-	4461.84	Mo	5 h	5 h	-	-
4468.219	Zr I	3	-	-	-	4465.365	Pr	5	-	-	-	4461.71	Th	-	5	-	-
4468.196	Pr	10	-	-	-	4465.357	Cr I	20	10	-	-	4461.654	Fe I	300	125	-	S
4468.165	Dy	10	4	-	-	4465.345	Th	30 s	15	-	-	4461.61	Kr	-	[2 hl]	-	Me
4468.140	Er	12	-	-	-	4465.267	Yt I	2	6	-	-	4461.55	Mo	4	5	-	-
4468.087	Mo	5	5	-	-	4465.230	Cb	2	2	-	-	4461.548	Eu	2	2	-	-
4468.07	Tb	2	-	-	-	4465.133	U	20	25	-	-	4461.46	A	-	[5]	-	Ms
4468.03	Eu	15 w	-	-	Kn	4465.075	Pr	30	3 w	-	-	4461.434	U	12	-	-	-
4468.024	Ce	3	-	-	-	4465.075	Nd	20	8	-	-	4461.373	Ce	3	-	-	-
4468.010	V I	20	15	-	-	4465.038	Ir	3	-	-	-	4461.372	Gd	4	-	-	-
4467.98	Tm	10	-	-	-	4464.968	Eu	80	10	-	-	4461.302	Cr	5	-	-	-
4467.97	P II	-	-	[50]	Gu	4464.907	Cr I	15	8	-	-	4461.292	Pr	15	2	-	-
4467.969	Ni	2	-	-	-	4464.776	Fe I	35	3	-	-	4461.27	As	-	30	-	Ro
4467.968	Sm	3	-	-	-	4464.769	Mo	20	20	-	-	4461.26	Tb	8 w	-	-	-
4467.937	Re	50	-	-	-	4464.75	Dy	2	-	-	Ed	4461.224	Fe I	5	1	-	-
4467.910	Cb	-	10 h	-	-	4464.748	Gd	20	20	-	-	4461.223	Zr II	4	3	-	-
4467.89	Dy	6	2	-	-	4464.747	V I	10	4	-	-	4461.19	Dy	4	2	-	-
4467.853	U	2	2	-	-	4464.691	Ce	8 s	3	-	-	4461.183	Hf	25	2	-	-
4467.853	Nd	10	5	-	-	4464.677	Mn	60	50	-	-	4461.136	Ce	30	6	-	-
4467.83	O II	-	-	[50]	Mh	4464.669	Cr I	15	1	-	-	4461.085	Th	10 d	8 d	-	-
4467.69	Tb	7	-	-	-	4464.65	Er	8 d	2	-	-	4461.085	Mn	30	25	-	-
4467.664	W	4	-	-	-	4464.620	Re	3	-	-	-	4460.988	V I	9	5	-	-
4467.60	Se II	-	-	[300]	Bl	4464.565	Eu	30	-	-	-	4460.927	U	12	10	-	-
4467.561	Cr I	20	2	-	-	4464.48	Mo	4	5	-	-	4460.769	Cr I	25	-	-	-
4467.546	Re	25	-	-	-	4464.455	Ti II	12	40	-	-	4460.625	Mo	20	20	-	-
4467.539	Ce	30	4	-	-	4464.425	S	-	[100]	-	Hn	4460.531	U	3	6	-	-
4467.40	Mo	2	4	-	-	4464.318	I II	-	[30]	-	Ke	4460.53	A	-	[20]	-	Ms
4467.342	Ir	4	-	-	-	4464.270	V I	3	10	-	-	4460.497	W	25	7	-	-
4467.341	Sm II	200	200	-	-	4464.2	bh La	10	-	-	Mo	4460.423	Cb	5	10	-	-
4467.308	Ce	6	-	-	-	4464.173	Ce	10	1	-	-	4460.4	bh Zr	4	-	-	L
4467.260	Ru	20	-	-	-	4464.148	Cb	5	10	-	-	4460.377	Mn	20	5	-	-
4467.182	Ir	2	-	-	-	4464.127	Zr	3	-	-	-	4460.341	Zr I	8	-	-	-
4467.17	Gd	20	-	-	Kn	4464.1	bh La	3	-	-	Me	4460.31	Dy	2 h	-	-	-
4467.14	Yb	-	2	-	Me	4464.07	Tb	2	-	-	-	4460.292	V I	20 wh	10 wh	-	-
4467.110	Ba	20	3	-	-	4463.925	Pr	2 h	-	-	-	4460.29	As	-	10	-	Ro
4467.09	Tb	2	-	-	-	4463.889	Sm	3	3	-	-	4460.23	Tb	2	-	-	-
4467.088	Gd	50	-	-	Kn	4463.856	Ce	5	-	-	-	4460.213	Ce	60	20	-	-
4467.080	Ce	4	-	-	-	4463.85	Mo	-	25	-	-	4460.204	Cb	8	-	-	-
4467.071	U	4	6	-	-	4463.829	Eu	2 w	2	-	-	4460.19	I	-	[8]	-	Bl
4466.940	Fe	7	-	-	-	4463.828	Th	3	-	-	-	4460.18	Cb	2 h	10	-	-
4466.909	Zr I	8	1	-	-	4463.80	Hg II	-	[2]	-	Nu	4460.175	Ne I	-	[100]	-	IMe
4466.886	Co I	300	5	-	-	4463.762	Pr	10	4	-	Kn	4460.138	Nd	3	-	-	-
4466.852	V I	8	6	-	-	4463.755	U	2	4	-	-	4460.13	Br	-	[2]	-	Bl
4466.807	Ne I	-	-	[70]	IMe	4463.70	P II	-	[70]	-	Gu	4460.035	Ru I	150	80	-	-
4466.794	Ce	3	-	-	-	4463.6902	Kr I	-	[800]	-	S	4460.00	Zr	2	-	-	Ks
4466.785	Pr	2	-	-	Kn	4463.582	S II	-	[200]	-	Hn	4459.99	Kr II	-	[8 h]	-	Me
4466.733	Ir	25	-	-	-	4463.541	Ti I	25	12	-	-	4459.99	Tm	5	1	-	Me
4466.729	Ce	3	-	-	-	4463.533	Yt I	2	-	-	-	4459.96	N II	-	[2]	-	Fl
4466.729	W	20	10	-	-	4463.527	Re	20	-	-	-	4459.804	U	2	3	-	-
4466.658	K II	-	-	[20]	Dm	4463.504	W	15	7	-	-	4459.763	Ta	30	10	-	-
4466.60	As II	-	80	-	Ro	4463.484	Ir	3	-	-	-	4459.760	V I	20 h	12 h	-	-
4466.554	Fe I	500	300	-	S	4463.48	Yb	-	2	-	Me	4459.738	Cr I	25	25	-	-
4466.553	Gd	200	150	-	-	4463.45	Mo	2	4	-	-	4459.63	Se II	-	[10]	-	Bl
4466.503	Ne I	-	-	[2]	Ps	4463.427	Ni I	10	-	-	-	4459.527	Os	15	2	-	-
4466.431	Pr	4	1	-	-	4463.410	Ce	35	6	-	-	4459.434	Pr	3	-	-	Kn
4466.423	Cb	2	2	-	-	4463.384	Ti I	25	12	-	-	4459.391	Cr I	20	-	-	-
4466.40	Hf II	10	20	-	-	4463.317	Pr	6	-	-	-	4459.38	Tb	10 w	-	-	-
4466.394	Ni I	3	-	-	-	4463.3	bh Sr	4	-	-	L	4459.288	Sm	8	8	-	-
4466.35	Br	-	-	[20]	Bl	4463.249	Gd	15	-	-	-	4459.25	Rn I	-	[250]	-	Rs
4466.348	W	20	10	-	-	4463.08	Pr	25	4	-	-	4459.242	Er	7	-	-	-
4466.343	Ru I	15	-	-	-	4462.99	Tb	2	-	-	-	4459.121	Fe I	400	200	-	S
4466.34	Eu	4 W	-	-	-	4462.985	Nd	60	20	-	-	4459.120	La II	8	3	-	-
4466.314	U	1 h	3	-	-	4462.974	U	18	30	-	-	4459.086	Ce	4	-	-	-
4466.28	O II	-	-	[30 h]	Mh	4462.94	P	-	[70]	-	Gu	4459.037	Ni I	400	20	-	-
4466.165	Cr I	15	1	-	-	4462.856	Ne I	-	[2]	-	Ps	4458.934	Nd	3	-	-	-
4466.10	P II	-	-	[30]	Gu	4462.799	Gd	10	-	-	-	4458.848	Ce	3	-	-	-
4466.07	Tm	3	-	-	-	4462.774	Cr I	20	2	-	-	4458.74	As	-	30	-	Ro
4466.045	Ne I	-	-	[5]	Ps	4462.760	U	3	5	-	-	4458.703	U	10	3	-	-
4466.02	Eu	2 W	-	-	-	4462.69	I	-	[10]	-	Bl	4458.646	Mo	8	10	-	-
4466.007	Ce	3	-	-	-	4462.627	Pr	9	-	-	-	4458.602	Ce	4	-	-	-
4465.981	Pr	90	30	-	-	4462.583	Sm	5	2	-	-	4458.595	Co I	10	-	-	-
4465.940	Os	9	-	-	-	4462.523	W	10	2	-	-	4458.538	Cr I	50	125	-	-
4465.924	Cb	2	2	-	-	4462.460	Ni I	150	20	-	-	4458.519	Nd	25	20	-	-
4465.834	Nd	8	4	-	-	4462.407	Nd	30	15	-	-	4458.514	Sm II	150	200	-	-

4458.5—4447.7 A.

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
4458.5	bh La	15	-	Me	4455.035	Pr	10 d	-	-	4451.566	Nd	100	50	-
4458.47	I	-	[35 h]	Bl	4455.035	Fe I	20	1	-	4451.545	Fe	2	4	Do
4458.46	Tb	3	-	-	4455.012	Mn	25	10	-	4451.534	Ce	3	1	-
4458.4	bh La	5	-	Me	4455.00	K II	-	[5]	Bn	4451.502	U	8	1	-
4458.336	Pr	90	10 w	-	4454.985	Ce	12	1	-	4451.474	Nd	10	15	Kn
4458.331	Os	3 l	-	-	4454.95	Se II	-	[50]	Bt	4451.36	Tb	2	-	m
4458.302	W	10	5	-	4454.89	Tb	4	-	-	4451.318	Ir	12	-	-
4458.294	Ce	2	-	-	4454.797	Zr II	7	1	-	4451.21	I	-	[8]	Bl
4458.262	Mn	25	20	-	4454.781	Ca I	200	5 hl	IWg	4451.178	Ir	2	-	-
4458.118	Cb	5	5	-	4454.778	Th	4	-	-	4451.124	Ce	3	-	-
4458.107	Fe I	30	1	-	4454.776	U	2	-	-	4451.08	I	-	[8]	Bl
4458.093	W	15	5	-	4454.762	Ce	5	-	-	4451.056	Th	3	1	-
4458.006	Th	10	2	-	4454.697	Gd	3	-	-	4450.983	Sm	-	7	-
4457.805	Sm II	3	3	-	4454.695	Pr	30	10	-	4450.901	V I	15	7	-
4457.776	Ce	6	-	-	4454.668	Re	100	-	-	4450.899	Ti I	150	60	-
4457.759	V I	7	6	-	4454.629	Sm II	100	100	-	4450.81	Lu	40	2	Me
4457.680	Cs II	-	[15]	Sv	4454.531	Ce	3	-	-	4450.806	Pr	5	-	-
4457.59	Tb	2	-	m	4454.517	Th	8	4	-	4450.790	Ir	5	-	-
4457.549	Mn	20	15	-	4454.383	Fe I	200	80	S	4450.787	Th	3	-	-
4457.51	Re	2 h	-	-	4454.382	Pr	60	15	-	4450.732	Ce	35	5	-
4457.479	V I	15	9	-	4454.37	Kr II	-	[10 whl]	Me	4450.720	Ta	30	8	-
4457.463	Ce	2 h	-	-	4454.33	Hg	-	[30]	Ps	4450.57	Tb	2	-	-
4457.432	Ti I	150	100	-	4454.285	Ne I	-	[5]	Ps	4450.500	U	4	6	-
4457.432	Zr II	40	7	-	4454.06	W	3	-	-	4450.486	Ti II	12	50	-
4457.424	Cb	15	15	-	4454.050	Ce	2	-	-	4450.364	W	12	4	-
4457.356	Mo	50	50	-	4454.04	Tm	20	1	Me	4450.34	Kr	-	[4 hs]	Me
4457.344	Hf	25	2	-	4453.96	Tb	2	-	-	4450.311	Fe I	12	2	-
4457.25	Kr II	-	[40 whl]	Me	4453.929	Gd	10	10	-	4450.301	Ni I	5	-	-
4457.195	Th	3	1	-	4453.9179	Kr I	-	[600]	S	4450.285	Zr I	8	-	-
4457.179	Nd	5	1	-	4453.875	Re	20	-	-	4450.258	Ce	2	-	-
4457.145	Ce	2	-	-	4453.87	Mo	4	5	Ex	4450.214	Pr	40 w	20 w	-
4457.095	U	3	6	-	4453.853	La I	3	-	-	4450.178	Ir	60	3	-
4457.045	Mn	20	10	-	4453.8	Pb II	-	[3]	Ea	4450.15	Ni I	2	-	m
4457.015	Sb II	-	2	Sp	4453.773	Ce	3	-	-	4450.134	Ce	3	-	-
4456.97	Eu	5 w	-	-	4453.706	Ti I	80	40	-	4450.11	Tb	4	-	-
4456.95	Ne II	-	[70]	Bn	4453.62	W	5	-	-	4449.984	Ti I	10	-	-
4456.901	Nd	5	1	-	4453.61	Dy	2 h	-	Ed	4449.977	Sm	15 w	4	-
4456.86	As	-	15	Ro	4453.35	V	-	20 hl	Me	4449.946	Gd	4	40	-
4456.800	Cb	5	5	-	4453.324	Ne I	-	[2]	Ps	4449.908	Cb	1 h	20 h	-
4456.710	Re	10 w	-	-	4453.321	Ti I	150	70	-	4449.9	bh Ca	2	-	L
4456.708	Sm	2 d	-	Kn	4453.253	Ne I	-	[5]	Ps	4449.867	Pr	125	80	-
4456.706	Th	4	3	-	4453.218	Th	10	-	1 h	4449.738	Mo	40	40	-
4456.69	Gd	3 h	-	-	4453.21	Kr II	-	[50 whs]	Me	4449.72	Tb	15	-	-
4456.650	Ti II	1	10	-	4453.160	Ce	15	-	-	4449.703	Er	30	1	-
4456.620	Ca I	20	15	-	4453.149	Pr	3	-	-	4449.702	Dy	20	12	Kn
4456.614	I II	-	[10]	Ke	4453.121	V I	7	3	-	4449.69	Ho	3	1	Ex
4456.61	A Ms	-	[2]	Ms	4453.1	bh La	20	-	Me	4449.635	Ce	12	1	-
4456.561	Ce	5	-	-	4453.10	Tb	4	-	Ed	4449.573	V I	12	9	-
4456.501	V	10	7	-	4453.005	Mn	50	20	-	4449.52	Tb	3 w	-	-
4456.43	S II	-	[35]	Hn	4453.00	Hf	8 h	2	-	4449.372	Mn	3	-	-
4456.42	Tb	2	-	m	4452.983	Ne I	-	[15]	Ps	4449.336	Ru I	125	100	-
4456.394	Nd	20	15	-	4452.951	Sm	8	6	-	4449.336	Ce	50	8	-
4456.380	Re	6	-	-	4452.881	I II	-	[700]	Ke	4449.326	Er	2	-	-
4456.298	Zr I	8	-	-	4452.81	Tb	25	-	-	4449.23	Tb	2	-	-
4456.26	I	-	[8]	Bl	4452.81	Dy	2	-	Ed	4449.214	Fe II	2	4	Do
4456.134	Nd	15	5	-	4452.808	Ir	15	2	-	4449.16	Dy	4	2	Kn
4456.112	W	15	5	-	4452.74	Mo	-	15	-	4449.15	Se II	-	[300]	Bl
4456.108	Sm II	30	25	-	4452.728	Gd	30	-	-	4449.148	Ti I	150	80	-
4456.07	Eu	4 w	-	Kn	4452.713	Sm II	200	200	-	4449.13	Eu	10 w	-	Kn
4456.02	Tb	2	-	-	4452.701	V I	10	6	-	4449.019	Gd	4	4 h	-
4455.902	Ce	3	-	-	4452.70	Hf II	-	10	Me	4449.010	W	20	6	-
4455.887	Ca I	100	75	IWg	4452.612	Ir	10	-	-	4448.947	Zr I	3	-	-
4455.886	U	6	8	-	4452.58	Tb	3	-	Ed	4448.924	Ce	2	-	-
4455.821	Mn	25	15	-	4452.568	Th	3	-	-	4448.88	A II	-	[15]	Rt
4455.795	La II	40	25	-	4452.56	Ne	-	[2]	Bl	4448.760	Cb	2	2	-
4455.687	Pr	8	-	-	4452.558	Mo	12	8	-	4448.702	Pr	5	-	-
4455.656	Ce	18	1	-	4452.553	Ce	25	-	-	4448.611	Er	6	-	-
4455.623	Nd	10	3	-	4452.529	Pr	2	-	Kn	4448.510	Th	5	2	-
4455.59	Ho	5	-	Kn	4452.524	Mn	8	-	-	4448.333	U	12	3 h	-
4455.564	Ne I	-	[15]	Ps	4452.44	P II	-	[150 I]	Gu	4448.265	Re	4	-	-
4455.49	Hg II	-	[30]	Ps	4452.41	O II	-	[70]	Mh	4448.23	Dy	5	2	Kn
4455.49	Dy	10	-	Kn	4452.153	La I	15	5	-	4448.228	Ce	2	-	-
4455.465	W	15	5	-	4452.008	V I	20	15	-	4448.20	O II	-	[70]	Mh
4455.462	Pr	8	-	-	4451.98	U	1	5 h	-	4448.13	Xe	-	[200 wh]	Hu
4455.461	Ce	3	-	-	4451.978	Nd	50	20	-	4448.124	Re	4	-	-
4455.458	Cr I	8	-	-	4451.97	Eu	6 W	-	Kn	4448.070	Er	5	-	-
4455.434	Zr I	6	-	-	4451.968	Mo	-	30	-	4448.04	Tb	25	-	-
4455.326	Ti I	150	80	-	4451.949	Pr	80	20	-	4448.0	bh La	20	-	Me
4455.318	Mn	25	15	-	4451.82	Os	3	-	-	4447.994	Nd	10	2	-
4455.305	Mo	10	12	-	4451.804	Sr I	2	-	ISn	4447.976	U	6	4	-
4455.28	Te	-	[15]	Bl	4451.76	Sm	3 h	-	-	4447.910	Pr	4	-	Kn
4455.258	Fe	2	3	Do	4451.64	Tb	10	-	-	4447.9	bh La	10	-	Me
4455.232	Sm	3	-	-	4451.637	Hg	-	[7]	St	4447.845	Th	12	5	-
4455.211	La I	3	-	-	4451.586	Mn	125	100	-	4447.8	Al II	-	[15]	Sy
4455.039	Th	4	4	-	4451.581	Er	10	1	-	4447.722	Fe I	200	100	S

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
4447.722	Cb	-	5 h	-	4444.438	Mo	3	3	-	4440.80	I	-	[8]	Bl
4447.72	Se II	-	[4]	Bt	4444.393	Ce	30	4	-	4440.739	U	20	20	-
4447.686	Ce	6	-	-	4444.277	Nd	20	8	-	4440.71	Mo	2	5	Ex
4447.649	Cs	-	[10]	Sv	4444.266	Ti I	18	2	-	4440.616	Pr	15	-	-
4447.62	As	-	3	Ro	4444.264	Sm	100	100	-	4440.576	Th	15	6	-
4447.59	Tm	5	-	Me	4444.258	Er	6	-	-	4440.460	Zr II	4	3	-
4447.456	Ir	4	-	-	4444.207	V I	30 h	20 h	-	4440.44	Re	40	-	m
4447.44	Tb	3	-	-	4444.115	Nd	5	-	-	4440.433	Cb	1	5	-
4447.354	Os	200	3	-	4444.086	W	4	3	-	4440.363	Ne I	-	[15]	Ps
4447.345	Gd	2	-	-	4444.006	Pr	30 w	3 w	-	4440.36	Tb	2	-	m
4447.280	Ce	2	-	-	4444.005	Mo	10 h	10 h	m	4440.350	U	10	12	-
4447.24	Ho	3	3 h	Ex	4444.004	Cs II	-	[10]	Sv	4440.348	Ti I	80	35	-
4447.233	Mo	10	6 h	-	4443.949	La I, II	3	3	-	4440.26	Co	-	[15]	Bs
4447.184	Cb	15	20 h	-	4443.87	P	-	[50]	Gu	4440.183	Mo	4	5	-
4447.18	F II	-	[200 h]	Di	4443.806	Ir	10	-	-	4440.13	Dy	3	-	Ed
4447.146	Mn	60	-	-	4443.804	Ti II	80	125	-	4440.130	Rb	-	10	Rr
4447.064	U	12	8 wh	-	4443.743	Ce	18	2	-	4440.126	Ce	4	-	-
4447.035	N II	-	[300]	Fl	4443.72	Kr II	-	[3]	Me	4440.09	A II	-	[5]	Rt
4446.985	Pr	50	30 wh	-	4443.707	Cr	15	2	-	4440.041	Eu	6 w	-	-
4446.92	Tb	10	-	Ed	4443.655	Yt I	4	-	-	4439.988	Pr	5	-	-
4446.915	Sm II	10	4	-	4443.647	U	4	1 h	-	4439.952	Nd	5	-	-
4446.842	Fe I	10	10	-	4443.400	Nd	10	3	-	4439.95	Ne II	-	[15]	Bl
4446.78	I II	-	[35]	Mu	4443.342	V I	12	10	-	4439.885	Fe I	6	1	-
4446.74	Mo	4	2	Ex	4443.297	Cb	2	1	-	4439.830	Mn	10	-	-
4446.714	Eu	6 W	-	-	4443.296	Ce	3	-	-	4439.761	Ru I	125	50	-
4446.71	F II	-	[150 h]	Di	4443.266	Sm	3	1	-	4439.722	W	12	6	-
4446.639	Ce	3	-	-	4443.197	Fe I	200	100	S	4439.71	Rn	-	[10]	Rc
4446.629	Yt I	4	-	-	4443.195	Ti I	5 h	-	-	4439.639	Os	30	2	-
4446.526	U	6	-	-	4443.099	Th	10	5	-	4439.636	Er	2	-	-
4446.51	F II	-	[40 h]	Di	4443.07	Hf	15	20	Me	4439.518	Ce	12	-	-
4446.48	Gd	80	2	m	4443.069	Mo	25	20	-	4439.489	Mo	3	3	-
4446.48	Sb II	-	[25]	Lg	4443.042	Ti	8 h	-	-	4439.48	A II	-	[2]	Ms
4446.46	Ne II	-	[30]	Bn	4443.04	O II	-	[50]	Mh	4439.407	Ru	10	-	-
4446.427	Mo	25	25	-	4443.039	Pd I	5	2 h	-	4439.38	Tb	9	-	-
4446.387	Nd	100	50	-	4443.014	Cb	1	5	-	4439.30	Ne II	-	[30]	Bl
4446.331	U	6	-	-	4443.0	bh La	25	-	Me	4439.244	Ce	12	1	-
4446.32	Tb	2	-	-	4442.998	Zr II	8	6	-	4439.21	Yb	45	10	m
4446.258	Er	2	-	-	4442.913	Pr	2	-	Kn	4439.144	Pr	5	-	-
4446.168	Cb	5	8	-	4442.9	bh La	12	-	Me	4439.14	Sm	5	-	-
4446.154	Ce	8	-	-	4442.74	Tm	8	-	Me	4439.128	Th	20	15	-
4446.12	Cl I	-	[4]	Ks	4442.675	La I	6	-	-	4438.999	Nd	15	5	-
4446.02	Se II	-	[200]	Bl	4442.67	Ne II	-	[30]	Bn	4438.96	Tb	12	-	-
4445.98	Tb	3	-	-	4442.560	I II	-	[30]	Ke	4438.959	Mo	15	15	-
4445.964	U	4	3	-	4442.552	Pt I	800	25	-	4438.958	Er	2	-	-
4445.941	Ir	3	-	-	4442.485	Nd	6	6	-	4438.81	Cl	-	[8]	Bl
4445.900	Th	4	-	-	4442.473	Sm	12	12	-	4438.79	Lu	4	-	Me
4445.866	Pr	25	5	-	4442.463	Ce	6	-	-	4438.750	Th	5	2	-
4445.851	Cb	3	8	-	4442.441	Ni I	5	-	-	4438.679	U	2	2 h	-
4445.851	Ir	8	-	-	4442.343	Fe I	400	200	S	4438.48	Cl I	-	[15]	Ks
4445.846	Sm	4	2	-	4442.271	Sm	40	10	-	4438.463	Gd	3	-	Kn
4445.84	A I	-	[5]	Ms	4442.268	Cr	15	3	-	4438.443	U	2	1	-
4445.82	Cl I	-	[4]	Ks	4442.203	Mo	40	30	-	4438.40	Dy	2	-	Ed
4445.715	Co I	125	2	-	4442.141	Ir	2 wh	-	-	4438.353	Fe I	10	1	-
4445.69	Os	9	2	-	4442.1	bh Sr	3	-	L	4438.341	Ru	7	-	-
4445.547	Pt I	20	2	-	4442.031	Ce	2	-	-	4438.295	W	15	7	-
4445.501	Gd	3 h	1	-	4441.99	N II	-	[10 h]	Fl	4438.268	Gd	40	100	-
4445.480	U	2	1	-	4441.948	Co I	5	-	-	4438.226	Ti I	12	6	-
4445.38	Mo	-	15	Ex	4441.860	Ce	3	-	-	4438.184	Ce	2	-	-
4445.354	Pr	2	-	-	4441.811	W	20	10	-	4438.178	Pr	50	20	-
4445.308	Th	4	-	-	4441.808	Cb	3	5	-	4438.143	Gd	5	-	Kn
4445.303	Yt I	2	-	-	4441.800	Sm	30	20	-	4438.082	Ce	3	-	-
4445.295	Sb	-	2	Sp	4441.74	Br I	-	[80]	Ks	4438.057	Nd	4	-	-
4445.265	Ce	3	-	-	4441.683	V I	40 h	30	-	4438.051	Zr I	8	-	-
4445.155	Pr	5	1	-	4441.678	Ta	100 l	2 h	-	4438.044	Sr I	25	-	ISn
4445.150	W	20	6	-	4441.604	Ce	5	-	-	4438.04	Hf	30	2	-
4445.149	Sm	40	20	-	4441.591	Cb	1	2 h	-	4438.0	bh La	30	-	Me
4445.12	La I	3	-	m	4441.487	Eu	12 w	-	-	4437.952	Eu	4	1	-
4445.11	Tb	2	-	-	4441.48	Tb	4	-	-	4437.949	U	3	1	-
4445.09	Cl	-	[10]	Bl	4441.446	Ni I	5	-	-	4437.901	Cb	1	5	-
4445.036	Co I	40	2	m	4441.414	Pr	3	-	-	4437.9	bh La	15	-	Me
4444.981	Nd	20	-	-	4441.301	Nd	3 d	-	-	4437.872	Co I	2	-	Kb
4444.979	Th	8 l	3	-	4441.274	Ti I	25	10	-	4437.837	V I	20 h	12 h	-
4444.978	Ne I	-	[30]	Ps	4441.27	Tb	15	-	-	4437.823	Ir	2	-	-
4444.93	Gd	5	-	-	4441.213	Er	5	-	-	4437.82	Gd	4	-	-
4444.91	Mn	10	-	-	4441.21	I	-	[8]	Bl	4437.688	Pr	5	-	-
4444.908	I II	-	[25]	Ke	4441.10	Sm	2	-	-	4437.63	Tb	2	-	-
4444.823	Cu II	-	2 wh	Sh	4441.09	U	6	2	-	4437.613	Ce	20	2	-
4444.73	Mo	4	4	Ex	4441.086	Pr	15	1	-	4437.570	Ni I	10	-	-
4444.704	Ce	35	6	-	4441.029	Ta	60	2 h	-	4437.549	He I	-	[10]	IMr
4444.688	U	10	3	-	4440.95	Xe II	-	[25 wh]	Hu	4437.451	Pr	2	-	-
4444.61	Dy	10	2	Kn	4440.883	Ce	20	2	-	4437.434	Mo	4	4	-
4444.571	Er	8 d	-	-	4440.882	Nd	5	-	-	4437.40	Tm	10	10	Me
4444.562	Ti II	4	12	-	4440.872	Th	20	10	-	4437.348	Yt I	4	-	-
4444.507	Ru I	40	-	-	4440.837	Ir	10	-	-	4437.288	Ce	2	-	-
4444.453	W	4	2	-	4440.812	Ne I	-	[2]	Ps	4437.283	Pt I	25	2 h	-

4437.2—4427.2 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4437.27	Au I	50	10	-	4437.968	Cr	10	1	-	4430.627	Gd	150	40	-
4437.217	Cb	40	50	-	4433.908	Ir	10	-	-	4430.618	Fe I	200	8	S
4437.151	Mo	8	6	-	4433.889	U	15	12	-	4430.504	V I	10	5	-
4437.088	Os	12	-	-	4433.884	Sm II	200	200	-	4430.486	Cr	15	8	-
4437.075	Ce	2	-	-	4433.83	A II	-	[20]	Rt	4430.48	Lu	30	2	Me
4437.03	Eu	3 w	-	-	4433.786	Fe I	30	2	-	4430.48	Mo	-	8	Ex
4437.01	S	-	[25]	Ms	4433.74	Se II	-	[25]	Bl	4430.410	Ta	20	5	-
4436.981	Ni I	25	5	-	4433.725	Ce	12	1	-	4430.371	Ti I	35	15	-
4436.941	U	5	5	-	4433.721	Ne I	-	[70]	IMe	4430.311	Ru I	20	-	-
4436.930	Fe I	15	2	-	4433.683	Mn	12	-	-	4430.225	Yb	12	1	-
4436.904	W	30	12	-	4433.65	Tb	4	-	-	4430.207	Fe I	10	1	-
4436.888	Mo	20	15	-	4433.642	W	3	-	-	4430.20	Pt I	4	1 h	-
4436.811	U	2	3	-	4433.638	Gd	20	12	-	4430.18	A	-	[100]	Rt
4436.81	Kr II	-	[600]	Me	4433.576	Ti I	15	2	-	4430.147	Ce	2	-	-
4436.709	Cb	1	2	-	4433.501	Mo	4	125	-	4430.14	Tb	8	-	-
4436.67	Eu	2 w	-	Kn	4433.48	N	-	[5 h]	Fl	4430.126	Pr	5	-	-
4436.653	Mo	4	3	-	4433.398	Ne I	-	[10]	Ps	4430.088	U	8	3	-
4436.653	Ti I	3	1	-	4433.347	Sm	4	-	-	4430.020	Ti I	12	1	-
4436.65	Dy	4	2	Kn	4433.320	Rh I	15	5	-	4429.999	Ce	8	1	-
4436.627	Re	6	-	-	4433.235	Ce	3 h	-	-	4429.938	Cr	15	5	-
4436.592	Ti I	15	7	-	4433.221	Fe I	150	20	-	4429.904	La II	200	300	-
4436.592	Ce	2	-	-	4433.22	Eu	6 w	1	-	4429.90	Br	-	[4]	Bl
4436.558	Th	10	5	-	4433.071	Sm	9	2	-	4429.896	Er	4 w	-	-
4436.48	Mg II	5	-	Fl	4433.0	bh La	15	-	Me	4429.80	Ho	3	1 h	Ex
4436.454	Pr	2	-	-	4432.978	Ta	5	2	-	4429.796	V I	30	25	-
4436.352	Mn	80	50	-	4432.971	Th	25	15	-	4429.756	Eu	3	2	-
4436.348	Er	2	-	-	4432.949	La II	25	5	-	4429.644	Sm	25	15	-
4436.317	Os	80	3	-	4432.93	Hf	6 h	4 h	-	4429.618	U	6	5	-
4436.288	Th	8	4	-	4432.917	Ce	5	-	-	4429.60	Ne II	-	[15]	Bn
4436.27	Ra II	-	[200]	Rs	4432.880	Mo	5	3	-	4429.445	Cb	10	10	-
4436.225	Gd	30	100	-	4432.840	Re	2	-	-	4429.274	Th	5	2	-
4436.211	Ce	5	-	-	4432.82	Al II	-	[4]	Sy	4429.270	Ce	35	5	-
4436.204	Co I	15	-	-	4432.78	Dy	2	-	Ed	4429.238	Pr	200	125	-
4436.138	V I	25 h	15 h	-	4432.720	Ce	8	1	-	4429.23	Dy	2	-	Ed
4436.11	Tb	15	-	-	4432.715	Tb	12	-	m	4429.111	Mo	4	4	-
4436.103	Gd	4	-	Kn	4432.71	N II	-	[30 h]	Fl	4429.106	Zr I	5	-	-
4436.06	Cs II	-	[2]	Sv	4432.602	Ti	18	2	-	4429.037	Sm	2	2	-
4436.046	Th	8	4	-	4432.573	Fe	5	1	-	4428.992	Nd	5	-	-
4436.025	Mn	12	-	-	4432.526	Ne I	-	[20]	Ps	4428.94	Gd	3	-	-
4435.847	La II	5	3	-	4432.412	Os	30	1	-	4428.928	Ir	4	-	-
4435.840	Zr	3	-	-	4432.41	S II	-	[50]	Hn	4428.878	U	5	5	-
4435.78	Dy	4	-	Kn	4432.336	Pr	80	10 w	-	4428.85	Tm	4	5	Me
4435.76	Br	-	[4]	Bl	4432.33	Se II	-	[60]	Bl	4428.8	Pb II	-	[2]	Ea
4435.742	W	10	4	-	4432.293	Nd	12	2	-	4428.576	Sb	-	5 h	-
4435.730	Pr	15 w	-	-	4432.279	Ce	4	-	-	4428.541	Th	-	2	-
4435.708	Cs I	-	[20]	Sv	4432.262	Th	8	-	-	4428.54	Ne II	-	[100]	Bn
4435.688	Ca I	100	15	IWg	4432.26	Ne II	-	[5]	Bl	4428.515	V I	25	20	-
4435.620	Ce	5	-	-	4432.224	Er	4 l	-	-	4428.501	Cr I	25	6	-
4435.602	Eu	400 R	100	Kn	4432.218	Nd	2	-	-	4428.488	W	8	2	-
4435.592	Ir	8	-	-	4432.192	W	8	1	-	4428.461	Ru I	125	-	-
4435.55	Tb	12	-	-	4432.175	Cr	30	15	-	4428.458	Pr	3	-	-
4435.533	U	8	6	-	4432.160	Tb	3	-	m	4428.438	Ce	18	3	-
4435.53	Eu	2000	-	Kn	4432.089	Ti II	2	1	-	4428.379	U	4	1	-
4435.475	Ce	2	-	-	4431.922	Mn	8	-	-	4428.34	Tb	3	-	-
4435.44	W	6	-	-	4431.904	Ir	2	-	-	4428.225	I II	-	[35]	Ke
4435.252	Pr	5	-	-	4431.898	Ba	60	30	-	4428.216	Ce	2	-	-
4435.152	Fe I	70	3	-	4431.890	Pr	40	5 w	-	4428.211	Mo	5	4	-
4435.095	Nd	15	4	-	4431.875	U	6	-	-	4428.2	bh La	40	-	Me
4435.094	Ne I	-	[5]	Ps	4431.872	Nd	5	-	-	4428.15	P	-	[70]	Gu
4435.05	Rn I	-	[200]	Rs	4431.87	Sb II	-	[5]	Lg	4428.1	bh La	30	-	Me
4435.02	Dy	2	-	Ed	4431.769	Gd	60	1	Kn	4428.0	bh La	15	-	Me
4435.00	Tb	4	-	-	4431.73	As II	-	200	Ro	4427.995	Mg II	7	-	Fl
4434.96	Te	-	[70]	Bl	4431.730	I	-	[20]	Ke	4427.981	Ne I	-	[15]	Ps
4434.960	Ca I	150	25	IWg	4431.725	Nd	8	-	-	4427.97	N	-	[5]	Fl
4434.958	Ir	3	-	-	4431.67	Ne II	-	[5]	Bl	4427.953	Re	25 w	-	-
4434.953	Mo	80	80	-	4431.67	Kr II	-	[500]	Me	4427.918	Ce	25	4	-
4434.953	Th	4	-	-	4431.66	U	2	1 h	-	4427.883	Pr	9 w	-	-
4434.952	Ce	8	-	-	4431.619	Co I	5	-	-	4427.791	Sm II	8	8	-
4434.945	U	8	-	-	4431.559	Pr	10	-	-	4427.755	Ne I	-	[30]	Ps
4434.931	Ir	3	-	Ab	4431.493	Zr I	8	1	-	4427.725	Cr I	8	-	-
4434.92	Se II	-	[40]	Bl	4431.369	Sc II	50	3	-	4427.71	Tb	3	-	-
4434.852	Pr	25	3 w	-	4431.35	Ca	-	6	-	4427.672	Re	3	-	-
4434.803	Eu II	20 w	2	-	4431.282	Ti I	25	12	-	4427.658	Th	8	5	-
4434.600	V I	20	12	-	4431.107	Zr I	3	-	-	4427.653	U	12	15	-
4434.52	Hf	6 h	-	Me	4431.086	Ta	4	-	-	4427.605	Gd	20	15	-
4434.48	Tb	20	-	-	4431.02	S II	-	[20]	Hn	4427.581	Sm II	25	25	-
4434.474	Ir	5	-	-	4431.02	A	-	[80]	Rt	4427.567	La I	30	50	-
4434.372	Ce	3	-	-	4431.00	Dy	6	4	Kn	4427.44	Yb	5	-	m
4434.321	Sm II	200	200	-	4430.97	Br	-	[2]	Bl	4427.391	Tb	4	-	Kn
4434.233	I	-	[20]	Ke	4430.954	Ta	4	1	-	4427.382	W	10	3	-
4434.23	Mo	-	6 h	Ex	4430.90	Ne II	-	[50]	Bn	4427.38	As II	-	200	Ro
4434.06	Tb	2	-	-	4430.875	Mo	-	4	-	4427.312	V I	20	15	-
4434.05	W	3	-	-	4430.80	Eu	10 W	-	Kn	4427.312	Fe I	500	200	S
4434.001	Ti I	100	50	-	4430.737	Tb	8	-	m	4427.25	Sb II	-	[15]	Lg
4433.991	Mg II	8	-	Fl	4430.7	Rb	-	[20]	Dr	4427.243	Zr I	10	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4427.21	N II	—	[5]	Fl	4424.046	Cs II	—	[10]	Sv	4420.96	Lu	15	—	Me
4427.101	Ti I	125	60	—	4423.994	A I	—	[80]	IMe	4420.942	Cr I	8	—	—
4427.071	Ce	2	3	—	4423.945	Th	8 w	4 w	—	4420.90	A	—	[40]	Rt
4426.961	Pr	2	—	—	4423.933	Pr	5	1	—	4420.9	bh Sr	5	—	L
4426.936	U	20	1	—	4423.914	V I	7	6	—	4420.841	Ru I	40	—	—
4426.87	Dy	4	2	Kn	4423.9	P II	—	[30]	Gu	4420.8	Rb	—	[2]	Dr
4426.822	Nd	12	2	—	4423.898	La I	5	5	—	4420.742	Mo	6	5	—
4426.80	Eu	10 W	—	—	4423.871	Cb	1	5	—	4420.665	Sc II	20	2	—
4426.771	Er	12	—	—	4423.86	Tb	2	—	Ed	4420.641	U	2 h	3 h	—
4426.685	Cb	8	8	—	4423.817	Re	2	—	—	4420.64	P	—	[70]	Gu
4426.676	U	18	15	—	4423.778	W	12	5	—	4420.64	Gd	10	—	Kn
4426.671	Mo	30	30	—	4423.759	I II	—	[80]	Ke	4420.635	Cb	15	15	—
4426.508	Pr	3	—	—	4423.737	U	6	8	—	4420.63	Os II	—	4	—
4426.422	Eu	4 W	2	—	4423.716	K II	—	[10]	Dm	4420.54	Ho	2	2	Kn
4426.35	Ra	—	[4]	Rs	4423.685	Pr	2	—	—	4420.534	Er	15	—	—
4426.34	Tm	4	—	Me	4423.678	Ce	25	3	—	4420.529	Sm II	200	200	—
4426.325	Pr	3	—	—	4423.618	Mo	40	40	—	4420.52	Tb	4	—	—
4426.301	Ce	4	—	—	4423.55	P	—	[30]	Gu	4420.468	Os I	400 R	100	—
4426.30	Tb	5	—	Ed	4423.444	Ce	12	—	—	4420.468	W	30	10	—
4426.269	Ir	400 w	10	—	4423.379	Sm	9	2	—	4420.456	Zr I	20	1	—
4426.178	Hf II	3 h	8	—	4423.35	Eu	4 W	—	Kn	4420.452	Cb	3	3	—
4426.146	Gd	50	2	—	4423.32	Pr	10 w	—	—	4420.417	Ce	3	—	—
4426.139	U	3	1	—	4423.318	Cr	15	6	—	4420.407	U	12	3	—
4426.12	Se II	—	[20]	Bl	4423.31	Na I	3	—	Da	4420.348	Ir	10	—	—
4426.103	Nd	5	—	—	4423.291	U	6	6	—	4420.304	Pr	4	—	—
4426.1	Rb	—	[30]	Dr	4423.212	V I	40	25 w	—	4420.20	Tb	12	—	—
4426.079	Ce	4	—	—	4423.11	Tb	35	—	—	4420.023	Pr	3	—	—
4426.055	Ti I	80	25	—	4423.1	bh La	20	—	Me	4419.94	Na I	3	—	Da
4426.013	Ru I	10	—	—	4423.057	Mo	8	6	—	4419.935	V I	30	20	—
4426.01	A	—	[300]	Rt	4423.04	Br I	—	[4]	Ks	4419.927	Ce	3	—	—
4426.005	V I	25 h	15 h	—	4423.004	Re	2	—	—	4419.834	Cb	3	5	—
4425.99	Ca	—	2	Ad	4423.000	Ni I	3	—	—	4419.776	Mn	100	20	—
4425.987	Th	6	4	—	4422.984	U	12	10	—	4419.721	Mo	3	2	—
4425.984	Sm II	9	7	—	4422.976	Ru	12	—	—	4419.675	Ca	3	—	—
4425.96	Tm	3	—	Me	4422.96	Eu	3 w	—	Kn	4419.667	Pr	100	50	—
4425.94	P II	—	[15]	Gu	4422.850	Mo	6	6	—	4419.657	Eu	3 W	2	—
4425.921	Ce	4	—	—	4422.825	Ti I	80	25	—	4419.611	Er	25	4	—
4425.914	W	15	6	—	4422.783	Th	6	3	—	4419.60	Ho	3	2	Ex
4425.867	U	4	2	—	4422.74	Hf II	15	25	—	4419.551	Ta	10	5	—
4425.865	Pr	2	—	—	4422.70	Kr II	—	[100 hs]	Me	4419.543	Fe	8	1	—
4425.828	Ti I	10	1	—	4422.697	Cr	10	6	—	4419.444	Cb	10	20	—
4425.82	Dy	3	—	Ed	4422.587	Yt I	60	60	—	4419.338	Sm	40	20	—
4425.8	bh Ca	3	—	L	4422.570	Fe I	300	125	S	4419.298	Ce	18	1	—
4425.773	Re	3	—	—	4422.56	Ho	3	—	Ex	4419.258	W	10	2	—
4425.761	Ir	10	—	—	4422.519	Ne I	—	[300]	IMe	4419.25	Mn	8	—	—
4425.712	V I	9	7	—	4422.477	V I	4	3	—	4419.161	La II	4	6	—
4425.663	Cs	—	[20]	Sv	4422.47	Er	30	20	m	4419.103	Cr	8	—	—
4425.607	Ce	6	—	—	4422.444	W	4	—	—	4419.08	U	—	2	—
4425.498	Pr	3	—	—	4422.439	Nd	10	—	—	4419.058	Pr	80	30	—
4425.482	Sb	—	2 h	Sp	4422.420	Ce	3	—	—	4419.036	Gd	200	200	—
4425.441	Ca I	100	20	IWg	4422.413	Gd	100	40	—	4419.00	Th	5	3	—
4425.412	U	8	—	—	4422.236	V I	6	6	—	4418.85	Dy	2	2	Ed
4425.400	Ne I	—	[150]	IMe	4422.23	Hf	12	6	—	4418.812	Re	10	—	—
4425.326	Ce	3 s	—	—	4422.140	Ce	6	—	—	4418.811	W	5	1	—
4425.25	Tb	2 h	—	—	4422.002	Pr	3	—	—	4418.784	Ce	40	10	—
4425.22	Hg II	—	[30]	Ps	4422.063	Mo	8	6	—	4418.763	Kr I	—	[50]	IHu
4425.220	Pr	2	—	—	4422.055	Th	4	—	—	4418.702	Er	5	—	—
4425.196	U	2	5	—	4422.02	I II	—	[15]	Ke	4418.669	Th	8	4	—
4425.191	Kr I	—	[100]	I	4421.961	Ir	20	2	—	4418.473	U	15	—	—
4425.14	Br I	—	[12]	Ks	4421.955	Ti II	6	35	—	4418.456	Pr	2	—	—
4425.129	Cr	15	1	—	4421.850	W	12	5	—	4418.451	W	12	4	—
4425.118	Ce	2	—	—	4421.788	Ce	3	—	—	4418.342	Ti II	10	20	—
4425.009	Gd	8	4	—	4421.759	Ti I	60	15	—	4418.295	Ce	3	—	—
4424.99	Sm	3	2	—	4421.709	Er	5	—	—	4418.27	Tb	3 w	—	—
4424.965	Ta	10	3 h	—	4421.69	Dy	4	4	Kn	4418.25	Hf	8	—	—
4424.906	W	8	2	—	4421.68	Se	—	[20]	Bt	4418.23	Pr	4	—	—
4424.800	Ne I	—	[300]	IMe	4421.656	Cb	1 h	10 h	—	4418.2	bh La	50	—	Me
4424.781	Ru	25	—	—	4421.573	V I	30 h	20 h	—	4418.1	bh La	25	—	Me
4424.752	Ir	3	—	—	4421.559	Ne I	—	[50]	Ps	4418.10	Sm	4	2	—
4424.657	Cb	—	5 h	—	4421.557	Th	8	2	—	4418.09	Dy	3	2	Ed
4424.595	Pr	90	35	—	4421.474	Ti I	3	—	—	4418.070	Ce	3	—	—
4424.570	Er	10	—	—	4421.473	Ce	3	—	—	4417.99	Tb	4	—	—
4424.563	V I	20	15	—	4421.456	Ru I	60	—	—	4417.983	U	4	2	—
4424.540	Ce	3	—	—	4421.38	Ne II	—	[30]	Bl	4417.915	Ce	4	—	—
4424.46	Tb	3	—	—	4421.345	Co I	10	—	—	4417.91	Hf	25	1	—
4424.393	Ti I	15	2	—	4421.321	Ce	4	—	—	4417.873	Pr	10 d	—	—
4424.343	Nd	50	50	—	4421.24	Gd	100	8	—	4417.721	Ti II	40	80	—
4424.342	Sm II	300	300	—	4421.231	Ga	100	35 w	—	4417.69	Ga	—	5	KI
4424.314	Ce	6	—	—	4421.14	Tb	2	—	—	4417.583	Sm II	80	80	—
4424.281	Cr I	25	35	—	4421.14	Te	—	[70]	Bl	4417.58	I	—	[8]	Bl
4424.197	Mo	5	3	—	4421.136	Sm II	150	150	—	4417.55	Tb	3	—	—
4424.140	Ca	3	—	—	4421.130	Ce	8	—	—	4417.442	Ti I	2 h	—	—
4424.102	Gd	25	10	—	4421.06	As	—	10	Ro	4417.440	Yt I	2	—	—
4424.075	Cr	10	2	—	4421.040	Pd I	6	—	—	4417.419	U	4	5	—
4424.047	Rh I	5	2	—	4421.010	W	12	3	—	4417.403	Co I	10	3	—

4417.3—4408.1 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4417.374	Ce	4	-	4414.35	Mo	5	4	4411.401	Pt I	2	1 h
4417.35	Hf II	25	50	4414.28	P	-	[100]	4411.37	Dy	3	2
4417.30	P II	-	[30]	4414.254	Pt I	2	1	4411.34	S I	-	[3]
4417.29	Re	20	-	4414.162	Gd	100	60	4411.334	Pr	25	-
4417.280	Ti I	80	20	4414.140	Zr I	5	-	4411.204	La II	4	10 h
4417.25	Eu	60 w	-	4414.108	Ti	10	-	4411.20	C II	-	40
4417.24	Kr II	-	[40]	4413.866	Cr	25	15	4411.176	Ir	40	2
4417.228	Mo	5	5	4413.86	W	5	1 h	4411.159	Gd	100	50
4417.185	Pr	4	-	4413.804	Ce	20	1	4411.135	Sm	10	5
4417.14	La I, II	2 h	2 h	4413.784	Nd	5	1	4411.13	Tb	3	-
4416.974	O II	-	[150]	4413.765	Pr	90	40	4411.11	Eu	2 w	-
4416.902	Ce	25 s	4 h	4413.74	Ca	-	3	4411.093	Cr I	15 d	12
4416.884	Nd	20	8	4413.683	Ba	10	3	4411.077	Ti II	7	100
4416.884	Kr I	-	[20]	4413.678	V I	15	10	4411.074	Yb	20 l	-
4416.879	Cb	-	2 w	4413.672	Mo	6	6	4411.052	Nd	50	20
4416.847	Th	4	-	4413.64	As II	-	50	4411.00	Dy	2	-
4416.84	I II	-	[15]	4413.63	Tb	4	-	4410.967	Cr	10 d	2
4416.825	U	3	3	4413.561	Ne I	-	[15]	4410.95	Te	-	[50]
4416.817	Fe II	-	7	4413.51	Eu	10 w	2	4410.876	U	3 h	4
4416.817	Ne I, II	-	[50]	4413.506	Re	2	-	4410.855	Pr	2	-
4416.71	Eu	3 w	-	4413.47	Gd	5	2	4410.760	Ce	10 l	2
4416.687	V I	3	2	4413.436	La I	3	-	4410.714	Fe	20	-
4416.66	Tb	3 d	-	4413.378	Th	6	3	4410.65	Eu	4 w	1
4416.618	Ce	5	-	4413.326	Nd	10	2	4410.641	Ce	12 s	3
4416.586	Pr	10	1	4413.291	Ru	12	-	4410.628	Pr	3	-
4416.57	U	1	3 h	4413.249	Pr	5	-	4410.537	Ir	10	-
4416.563	Nd	15	4	4413.24	W	5	-	4410.516	Ni I	25	4
4416.536	Ti I	70	10	4413.20	Ne II	-	[50]	4410.487	Mn	50	-
4416.483	Co	3	-	4413.190	Ce	35	2	4410.42	Tb	2	-
4416.474	V I	15 w	7	4413.17	Ac	-	100	4410.420	Th	4	2
4416.45	Lu	6	-	4413.16	Se	-	[20]	4410.4	bh Pb	5	-
4416.44	Dy	2	-	4413.137	U	15	4	4410.369	Kr I	-	[50]
4416.400	Ce	2	-	4413.042	Cd I	3	2	4410.304	Cr I	25	8
4416.26	Tb	30	-	4413.040	Zr I	12	-	4410.247	Nd	10	4
4416.241	Th	15	8	4413.017	W	10	2	4410.244	Pr	4	-
4416.07	Xe II	-	[80 whl]	4412.993	Cr	5	-	4410.213	Cb	15	30
4416.00	Sm	5	3	4412.897	Th	8	5	4410.208	Ca	-	[20]
4415.982	Nd	12	4	4412.871	U	4	2 h	4410.12	U	3	1
4415.977	Pr	3	-	4412.84	Tb	2 h	-	4410.066	Ce	3	-
4415.97	Gd	3	-	4412.80	Dy	3 h	-	4410.06	C	-	30
4415.865	U	8	6	4412.770	Mo	30	20	4410.06	Tb	2	-
4415.85	Se	-	[10]	4412.766	Pr	3	-	4410.026	Ru I	150	80
4415.825	Re	40	-	4412.745	Th	12	8	4409.950	Mo	15	15
4415.770	Ce	5	-	4412.740	Ce	3	-	4409.944	W	6	-
4415.741	Ta	40	10	4412.621	Sr I	4	-	4409.683	Pr	25 w	2 w
4415.710	W	10	3	4412.54	Ne II	-	[15]	4409.668	U	4	4
4415.700	Cd II	1	20	4412.533	Th	10	6	4409.64	Eu	6 W	-
4415.69	In	-	15 h	4412.52	Tb	3	-	4409.634	Zr I	3	-
4415.670	Mo	2	3	4412.512	U	3	2	4409.620	Ne I	-	[20]
4415.63	Gd	3	-	4412.428	Ti I	15	1	4409.6	bh La	4	-
4415.621	Ce	5	-	4412.39	Kr I	-	[6]	4409.553	Cr	5	-
4415.60	Cu I	40 w	-	4412.37	I II	-	[25]	4409.520	Nd	8	2
4415.587	Pr	3	-	4412.329	Ce	3	-	4409.519	Ti II	3	10
4415.578	Ti	8	-	4412.31	Cd II	-	10	4409.51	Tb	40 w	-
4415.559	Sc II	100	25	4412.30	Ca I	5	-	4409.443	Mo	10	12
4415.435	Gd	3 h	1	4412.285	Ne I	-	[20]	4409.384	Dy	30	8
4415.40	Sb II	3	4	4412.265	Nd	40	15	4409.36	Ho	3	1
4415.391	Yt I	3	2	4412.25	As	-	10	4409.359	Er	35	2
4415.241	U	12	12	4412.250	Cr I	35	10	4409.34	Yb	6	10
4415.220	Ce	5	-	4412.225	Mo	-	25	4409.337	Sm II	100	100
4415.141	Ne I	-	[5]	4412.207	La II	2	2 h	4409.31	I	-	[15]
4415.125	Fe I	600	400	4412.198	W	20	10	4409.301	Ce	2	-
4415.075	W	15	6	4412.155	Pr	50	15	4409.30	Ne II	-	[150]
4415.060	V I	7	4	4412.139	V I	25	20	4409.256	Gd	10	10
4415.029	Gd	3	-	4412.03	Eu	25 w	-	4409.22	Ti II	2	8
4414.893	Zr I	3	2	4412.017	Ce	20	2	4409.047	Ce	4	-
4414.888	O II	-	[300]	4411.94	P	-	[15 h]	4408.962	I II	-	[250]
4414.881	Cb	4 w	3 w	4411.936	Ti II	8	12	4408.891	Th	6	2
4414.879	Mn	150	60	4411.931	Zr I	3	-	4408.89	Kr II	-	[40 hs]
4414.84	Xe II	-	[150]	4411.93	Tb	3	-	4408.87	U	-	2
4414.743	U	6	3 h	4411.878	Mn	100	20	4408.869	Ce	12	1
4414.735	Gd	100	50	4411.827	Sm II	15	10	4408.861	Ir	4	-
4414.7	bh La	3	-	4411.802	Pr	4	1	4408.844	Pr	125	100
4414.647	Eu	6	2	4411.78	Te	-	[50]	4408.819	Nd	15	5
4414.63	Cd	-	200	4411.702	Mo	25	25	4408.81	Hf	8	-
4414.60	P II	-	[70]	4411.70	Tm	3	-	4408.79	Tb	3	-
4414.577	Ti	2	-	4411.70	W	10	-	4408.768	Ce	4	-
4414.544	Zr II	4	3	4411.691	Ce	8	-	4408.710	W	8	4
4414.541	V I	10	5	4411.634	Th	4	-	4408.511	V I	30 h	20 R
4414.530	Th	4	-	4411.584	Sm	25	5	4408.419	Fe I	125	60
4414.508	Ce	3 l	-	4411.567	Mo	10	8	4408.341	Ce	3	-
4414.436	Ru	10	-	4411.522	Cb	5	8	4408.280	W	25	12
4414.432	Nd	12	3	4411.52	C II	-	40	4408.261	Gd	100	150
4414.403	Pr	20	4	4411.51	Tb	4	-	4408.204	V I	30	-
4414.355	Cr I	15 h	-	4411.50	Sb	-	10 h	4408.163	Pr	10	2

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4408.085	Mn	60	5	-	4404.045	U	2 h	1 h	-	4400.764	Gd	15	8	-
4408.05	Dy	3	4	Kn	4403.951	W	20	9	-	4400.658	Mo	3	3	-
4407.958	U	12	12	-	4403.9	bh Ca	6	-	L	4400.582	Ti I	25	2	-
4407.91	Be I	20	[35]	Ps	4403.854	Cs	-	[20]	Sv	4400.579	Os	18	1	-
4407.822	Ce	3	-	-	4403.784	Ir	300	10	-	4400.575	V I	60	40	-
4407.716	Fe I	100	50	-	4403.767	Nd	5	-	-	4400.543	Ce	10	2	-
4407.678	Ti II	2	10	-	4403.72	Ta	-	8	-	4400.527	U	1	2	-
4407.637	V I	15 h	9 R	-	4403.678	Re	12	-	-	4400.51	Tb	2	-	-
4407.62	Br	-	[12]	Bl	4403.668	V I	20	15	-	4400.387	Th	6	3	-
4407.54	Dy	2	-	Ed	4403.605	Pr	100	40	-	4400.355	Sc II	150	30	-
4407.521	Sm II	10	7	Kn	4403.56	Dy	3	-	Ed	4400.354	Cb	5	10	-
4407.444	Mo	-	30	-	4403.555	Ce	6	-	-	4400.351	Fe	20	1	-
4407.278	Ce	40	3	-	4403.55	I	-	[20]	Ke	4400.254	Pr	25	10	-
4407.19	Gd	3	-	Kn	4403.498	Cr	15 d	25	-	4400.240	Zr I	8	-	-
4407.083	Eu	12 W	-	-	4403.372	Cr	15 d	6	-	4400.214	W	12	6	-
4407.072	Nd	15	8	-	4403.364	Sm II	50	50	-	4400.19	Sm	2	2	-
4406.88	Xe II	-	[100 whl]	Hu	4403.344	Zr II	5	3	-	4400.183	Gd	10	5	-
4406.866	Mo	8	10	-	4403.34	Mo	-	20	Ex	4400.148	Ce	6	-	-
4406.85	Sr	50 h	-	-	4403.295	Ce	8	1	-	4400.1	bh La	4	-	Me
4406.845	Ba	20	[3]	-	4403.282	Pr	25	10	-	4400.10	Dy	4	2	Kn
4406.782	Eu	15 w	-	-	4403.271	W	9	2	-	4400.10	Tb	3	-	-
4406.759	Ir	25	2	-	4403.27	Ho	3	1 h	Kn	4400.09	A	-	[30]	Rt
4406.75	Tb	3	-	-	4403.231	Gd	3	-	-	4400.028	Pr	30	20	-
4406.690	W	6	1	-	4403.19	Tb	20	-	-	4400.0	bh La	2	-	Me
4406.672	Gd	70	200	-	4403.165	Eu	8 W	2	-	4399.9670	Kr I	-	[200]	S
4406.666	Cr	5	-	-	4403.136	Gd	100	100	-	4399.94	Se II	-	[12]	Bl
4406.665	Pr	25	8	-	4403.118	Sm	25	10	-	4399.865	Sm II	20	15	-
4406.641	V I	40	30	-	4403.053	Ce	6	-	-	4399.84	Re	12 w	-	m
4406.58	Se II	-	[70]	Bt	4403.049	Sm II	15	10	-	4399.823	Cr I	20	3	-
4406.546	Pd I	30	2	-	4403.03	Cl I	-	[12]	Ks	4399.771	Ti II	40	100	-
4406.543	Cb	3	5	-	4403.02	La I, II	4	2	Me	4399.73	Dy	3	-	Kn
4406.530	Nd	5	-	-	4402.953	Zr I	8	-	-	4399.72	Br I	-	[10]	Ke
4406.529	U	4	8	-	4402.95	B	-	2	Sy	4399.64	Ca	-	10	Ad
4406.404	Re	60	-	-	4402.929	Th	4	2	-	4399.631	U	15	6	-
4406.396	W	7	1	-	4402.900	Mo	20	20	-	4399.607	Ni I	10	5	-
4406.38	Tb	2 h	-	-	4402.89	Eu	2	1	-	4399.6	bh Sr	6	-	L
4406.33	Ca	-	8	Ad	4402.86	S II	-	[3]	Hn	4399.60	Eu	2 w	-	Kn
4406.273	Cr I	10	-	-	4402.78	W	4	-	-	4399.587	Ru I	20	-	-
4406.147	V I	20 W	15 W	-	4402.736	Os	50	3	-	4399.579	Nd	10	3	-
4406.12	Sr I	3	-	Sd	4402.676	Co I	5 h	-	-	4399.541	Ce	4	-	-
4406.004	Ce	2 h	-	-	4402.649	La I	5	-	-	4399.495	Cs	-	[20]	Sv
4405.99	W	3	7	-	4402.605	Re	30	-	-	4399.472	Ir	400	100	-
4405.952	U	4	8	-	4402.580	Pr	4	-	-	4399.444	Zr II	3	-	-
4405.906	Nd	8	2	-	4402.551	Ba	80	10	-	4399.417	V I	7	4	-
4405.849	Pr	100	100	-	4402.52	Cl I	-	[2]	Ke	4399.39	Kr	-	[15 hs]	Me
4405.732	U	6	2	-	4402.498	Ta	100	20 h	-	4399.38	Th	3	1	-
4405.685	Ti I	20	6	-	4402.491	Mo	15	15	-	4399.326	Pr	40	20	-
4405.645	Sm II	8	8	-	4402.470	Nd	10	1	-	4399.313	Eu	12 w	1	-
4405.58	Dy	3	2	Ed	4402.437	U	8	8	-	4399.22	Mo	4	4	Ex
4405.501	Ir	3	-	-	4402.412	Ce	2	-	-	4399.203	Ce	35	6	-
4405.49	Te	-	[15]	Bl	4402.374	Ne I	-	[2]	Ps	4399.18	Tb	4	-	-
4405.469	Ce	18	2	-	4402.303	U	6	6	-	4399.17	Se II	-	[15]	Bl
4405.41	Tb	15	-	-	4402.30	Yb	6	20	m	4399.14	Cl II	-	[15]	Ke
4405.303	Ce	4	-	-	4402.158	Pr	2	-	-	4399.096	Th	8	8	-
4405.271	Eu	15 W	-	-	4402.06	Hg	-	[50]	Ps	4399.086	I	-	[20]	Ke
4405.253	Cs II	-	[35]	Sv	4402.054	Cb	1	8	-	4398.95	Yb	5	1	Me
4405.23	Ba II	-	[20]	Rs	4402.005	Ce	4	-	-	4398.787	Ce	20	3	-
4405.153	Ce	2	-	-	4401.986	Th	3	1	-	4398.625	Ni I	2	3	-
4405.145	Pr	25	20	-	4401.89	Te	-	[100]	Bl	4398.62	Hg II	-	[300]	Ps
4405.027	Mo	5	4	-	4401.853	Gd	200	100	-	4398.61	Tb	2	-	-
4405.011	V I	12	6	-	4401.848	Er	12	-	-	4398.592	I	-	[8]	Ke
4404.948	Co I	5	-	-	4401.669	Th	3	3	-	4398.542	Ce	4	-	-
4404.91	U	-	2	-	4401.547	Ni I	1000 W	30	-	4398.491	Mo	6	12	-
4404.91	A	-	[2]	Rt	4401.54	Tb	20	-	-	4398.45	Te	-	[70]	Bl
4404.904	Ti I	15	10	-	4401.515	Ce	5	-	-	4398.449	Ta	40	10	-
4404.9	bh La	3	-	Me	4401.450	Fe I	7	2	-	4398.314	Ti II	3	10	-
4404.86	Hg II	-	[50]	Ps	4401.4	Rb	-	[30]	Dr	4398.27	W	5	1 h	-
4404.86	Lu	5	-	Me	4401.300	Fe I	60	15	-	4398.265	Pr	25	9	-
4404.819	Yt I	2	-	-	4401.246	Ir	12	-	-	4398.252	Ce	2	-	-
4404.771	Ce	2	-	-	4401.24	Ho	3	3	Ex	4398.136	Ne I	-	[5]	Ps
4404.752	Fe I	1000	700	S	4401.172	Cb	-	10	-	4398.05	Ho	4	-	Ex
4404.707	Pr	25 w	4	Kn	4401.166	Sm	50	30	-	4398.030	Nd	15	5	-
4404.574	Ce	3	-	-	4401.151	Ce	2	-	-	4398.011	Yt II	150	100	-
4404.56	I	-	[8]	Bl	4401.145	Yt I	3	-	-	4397.994	Cs	-	[10]	Sv
4404.546	Mo	15	8	-	4401.02	Se II	-	[100]	Bl	4397.975	Ce	2	-	-
4404.53	As II	-	15	Ro	4401.02	A	-	[40]	Rt	4397.95	Eu	6 w	-	-
4404.46	W	3	1	-	4400.99	P	-	[50]	Gu	4397.94	Ne II	-	[100]	Bl
4404.43	Tb	3	-	-	4400.89	Pb	-	10	Sx	4397.919	Th	10	8	-
4404.396	Ti I	12	7	-	4400.873	Ce	10	2	-	4397.857	Ce	6	-	-
4404.382	Ce	2	-	-	4400.87	Kr II	-	[100 hl]	Me	4397.797	Ru I	150	-	-
4404.33	Kr II	-	[30 h]	Me	4400.870	Ni I	15	3	-	4397.79	Yt I	2	-	m
4404.275	Ti I	50	30	-	4400.86	W	5	-	-	4397.71	Eu	6	2	-
4404.250	Ce	4	-	-	4400.838	Pr	3	-	-	4397.679	Ce	4	-	-
4404.213	Os	18	1	-	4400.831	Cb	2	3	-	4397.670	Gd	8	2	-
4404.18	Mo	1	15 h	Ex	4400.828	Nd	50	20	-	4397.517	Gd	100	5	-

4397.3—4387.8 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4397.346	Sm	20	5	-	4394.42	Tm	30	-	Me	4391.337	Ce	30	-	-
4397.312	Nd	15	2	-	4394.413	Er	3	-	-	4391.33	Re	60 w	-	-
4397.31	Lu	7	-	Me	4394.384	Re	100 r	-	-	4391.26	Hf	3	-	Me
4397.292	V	8	6	-	4394.370	Ne I	-	[15]	Ps	4391.19	Eu	10 w	-	-
4397.292	Mo	30	30	-	4394.322	Mo	20	15	-	4391.114	Th	50	40	-
4397.277	Ce	5	-	-	4394.286	Ce	4	-	-	4391.111	Pr	10	-	-
4397.263	Os	18	3	-	4394.195	Nd	15	5	-	4391.110	Nd	10	4	-
4397.251	Cr I	25	5	-	4394.083	W	20	9	-	4391.080	Os	15	3	-
4397.197	Pr	2	-	-	4394.065	Ti II	5	15	-	4391.034	Ti II	6	25	-
4397.191	Ce	3	-	-	4394.043	Pr	8	-	-	4391.027	Ru I	20	-	-
4397.15	Hf	-	3 h	Me	4394.02	Tb	9	-	-	4390.955	Gd	100	100	-
4397.121	Pr	2	-	Kn	4394.013	Yt I	3	-	-	4390.954	Fe I	100	35	S
4397.04	La I	3	-	Kn	4394.00	Ca	-	2	Ad	4390.93	Mo	1	8 h	Ex
4397.038	Ob	2	3	-	4393.925	Ti I	60	12	-	4390.91	Tb	30	-	-
4396.909	Cs II	-	[15]	Sv	4393.904	Ce	3	-	-	4390.865	Sm II	150	150	-
4396.872	Pr	12	2	-	4393.835	V I	15	10	-	4390.809	Ca	4	-	-
4396.850	Mo	5	6	-	4393.76	Th	3	1	-	4390.70	Hf	3	-	-
4396.79	Re	25	-	m	4393.75	Yb	25 hl	-	-	4390.662	Nd	20	15	-
4396.79	La I	4	2 h	Kn	4393.709	Mo	8 h	5 h	-	4390.608	V I	10	3	-
4396.759	Sm	5	3	-	4393.588	U	40	6	-	4390.585	Mg II	10	-	Fl
4396.75	Br	-	[4]	Bl	4393.56	Br	-	[25]	Bl	4390.550	U	2	2	-
4396.685	Ru	7	-	-	4393.552	Ce	5	-	-	4390.53	Ho	2	-	Kn
4396.661	Mo	25	25	-	4393.534	Cr	5	-	-	4390.496	Ce	5	-	-
4396.582	Ce	20	1 h	-	4393.505	La	4	2	-	4390.435	Ru I	150 R	80	-
4396.55	Tb	10	-	-	4393.492	Pr	8	2	-	4390.38	Cl I	-	[8]	Ks
4396.50	Yb	2	2	m	4393.45	Na I	20	-	Da	4390.363	Eu	4 w	2	-
4396.49	Tm	8	-	Me	4393.37	Mn	8	5 h	-	4390.34	I	-	[15 h]	Bl
4396.479	Th	10	8	-	4393.360	Sm	20	6	-	4390.322	Na I	2	-	-
4396.437	Ce	2	-	-	4393.348	Nd	15	2	-	4390.279	Ce	10	-	-
4396.40	Br II	-	[20]	Bl	4393.28	Dy	2 h	-	Kn	4390.19	Er	6	-	m
4396.370	Nd	2	-	Kn	4393.24	Mg	-	2	-	4390.159	U	1	3	-
4396.369	Mo	4	4	-	4393.20	Xe II	-	[200 wh]	Hu	4390.153	Ce	2	-	-
4396.32	Ag	100	4	Kp	4393.192	Ce	35	3	-	4390.145	Pr	8	1	-
4396.318	La	4	-	-	4393.177	Sm	1	2	-	4390.14	Na I	15	-	Da
4396.191	Ce	5	-	-	4393.168	Ca	5	2	-	4390.051	Nd	30	3	-
4396.16	Lu	2	-	Me	4393.088	V I	12	9	-	4389.995	Gd	30	80	-
4396.117	Pr	80	50	-	4393.057	Th	3	3	-	4389.974	V I	80 R	60 R	-
4396.087	Re	20 w	-	-	4393.045	Pr	3	-	-	4389.92	Tb	2	-	m
4396.05	Dy	4	2	Ed	4392.95	Tb	4	-	-	4389.92	Te	-	[50]	Bl
4396.03	Tb	2	-	-	4392.83	Yb	3	20	-	4389.885	Gd	40	40 h	-
4396.028	Ce	8	2	-	4392.76	As II	-	5	Ro	4389.870	Ni I	5	5	-
4396.00	Te	-	[100]	Bl	4392.713	Pr	2	-	-	4389.868	La I	5	-	-
4395.96	Tm	5	-	Me	4392.691	Ob	5	10	-	4389.843	W	15	6	-
4395.95	O II	-	[80]	Fl	4392.69	Hf	2	-	Me	4389.81	Tb	3	-	-
4395.930	Ag	10	30	-	4392.676	Ce	4	-	-	4389.807	Ce	4	-	-
4395.879	Co I	4 wh	2	-	4392.605	Sm II	10 h	6	-	4389.79	Dy	3	2	Kn
4395.842	Ti II	10	30	-	4392.591	Ir	100	4	-	4389.76	Cl I	-	[25]	Ks
4395.788	Pr	30	2 w	-	4392.506	U	6	2	-	4389.76	Yb	1	10	Me
4395.77	Xe	-	[200 whl]	Hu	4392.486	Re	100	-	-	4389.752	Mn	50	-	Me
4395.75	U	1	2	-	4392.442	Pr	2	-	-	4389.72	Kr II	-	[20 hl]	Me
4395.725	Ce	6	-	-	4392.432	Ce	3	-	-	4389.597	Sc I	10	-	-
4395.7	bh La	6	-	Me	4392.34	Tb	3	-	-	4389.570	Mo	6	6	-
4395.6	bh La	3	-	Me	4392.23	Ti	3	-	Kn	4389.511	Pr	8	-	-
4395.556	Ne I	-	[50]	IMe	4392.211	U	3	6	-	4389.48	In	-	5 h	Sq
4395.500	Nd	12	4	-	4392.17	Re	5	-	m	4389.40	Tb	3	-	-
4395.417	Cr	15	1	-	4392.167	Ce	2	-	-	4389.32	Cl	-	[6]	Bl
4395.29	Au II	5	2	-	4392.123	Mo	15	15	-	4389.247	Fe I	35	2	-
4395.286	Fe I	80	-	-	4392.117	Nd	10	4	-	4389.22	Eu	2 w	-	-
4395.228	V I	60 R	40 R	-	4392.079	Pr	5	-	-	4389.112	Ce	5	-	-
4395.207	Zr I	10	-	-	4392.074	V I	25	15	-	4389.071	Eu	5	2	-
4395.081	W	6	2	-	4392.071	Gd	100	100	-	4389.04	Tb	6	-	-
4395.051	Ce	5	-	m	4392.07	Sm	-	2	-	4388.991	Gd	4	4	-
4395.035	Ti II	50	150	-	4392.028	Ce	2	-	-	4388.990	Ru	12	-	-
4395.01	Hf	8 h	-	-	4392.00	I	-	[8]	Bl	4388.987	Sm	10	8	-
4395.005	Pr	25	15	-	4391.988	Pr	30 w	5 w	-	4388.90	Kr II	-	[3 hl]	Me
4394.98	Dy	25	4	Kn	4391.94	Ne II	-	[150]	Bl	4388.764	Cs II	-	[10]	Sv
4394.959	Ru	15	-	-	4391.893	Ce	2	-	-	4388.729	Pr	10	1	-
4394.95	Br	-	[12]	Ks	4391.884	Co I	10	3	-	4388.620	Pd I	8	2	-
4394.941	Zr I	8	-	-	4391.848	U	3 h	1	-	4388.549	Ti	10	1	-
4394.93	Tb	15 d	-	-	4391.84	S II	-	[30]	Hn	4388.513	Zr II	3	-	-
4394.899	Th	10	8	-	4391.826	Pt I	50	3	-	4388.51	I	-	[15 h]	Bl
4394.858	Os	150	6	-	4391.753	Cr I	50	35	-	4388.413	Th	8	3	-
4394.855	Ti I	8	-	-	4391.675	V I	8	6	-	4388.411	Fe I	125	50	-
4394.807	V I	5	5	-	4391.661	Ce	40	15	-	4388.36	Er	8	1	-
4394.779	Ce	30	3	-	4391.657	Er	5	-	-	4388.358	Ob	10	15	-
4394.773	Ne I	-	[15]	Ps	4391.652	Gd	3	-	Kn	4388.333	Ir	8	-	-
4394.746	Pr	9	2	-	4391.61	Br I	-	[25]	Ks	4388.275	Mo	6	20	-
4394.73	Gd	10	-	-	4391.6	bh La	8	-	Me	4388.25	Tb	20	-	-
4394.677	Yt I	2	-	-	4391.571	Co I	10 wh	4	-	4388.129	K II	-	[40]	Dm
4394.65	A II	-	[2 h]	Rt	4391.535	Mo	15	15	-	4388.082	Mn	60	-	-
4394.64	U	2	1	-	4391.514	Pr	20	4	-	4388.075	Ti I	25	5	-
4394.55	I	-	[8]	Bl	4391.5	bh La	4	-	Me	4388.007	Ce	8	3	-
4394.514	W	7	1	-	4391.496	U	5	4	-	4387.929	Co I	3	1	-
4394.497	Zr I	5	-	-	4391.440	Gd	15	25	-	4387.928	He I	-	[30]	IMr
4394.471	Mo	8	8	-	4391.369	Eu	8 w	-	-	4387.897	Fe I	150	35	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4387.884	Eu	200	-	-	4384.643	Mg II	8	-	Fl	4380.7	Rb	-	[20]	Dr
4387.745	Cb	3	5	-	4384.633	Ce	3	-	-	4380.648	Er	6	-	-
4387.731	Yt	4	-	-	4384.59	U	2	2	-	4380.640	Gd	100	125	-
4387.678	Gd	150	-	-	4384.543	Ni I	25	1	-	4380.592	Mo	15	15	-
4387.6	bh La	10	-	Me	4384.514	Nd	5	2	-	4380.555	La I	4	-	-
4387.590	U	4	1	-	4384.454	Ce	4	-	-	4380.554	V I	15	10	-
4387.577	Pr	2	-	-	4384.428	Ca II	-	[25]	Sv	4380.422	Sm	25	6	-
4387.53	Cl I	-	[6]	Ks	4384.30	Dy	4	2	Kn	4380.333	Ce	4	-	-
4387.501	Ce	3	-	-	4384.3	bh Ca	6	-	L	4380.316	Pr	50	20	-
4387.5	bh La	5	-	Me	4384.294	Sm II	50	50	-	4380.293	Mo	30	25	-
4387.496	Cr	15 d	15	-	4384.192	Mo	8	-	-	4380.270	U	12	6	-
4387.460	W	4	-	-	4384.136	Pr	30 w	25 w	-	4380.23	Dy	5	2	Kn
4387.444	Pr	5	1	-	4384.08	Ne II	-	[5]	Bl	4380.167	Eu	3 w	-	-
4387.42	Tb	2	-	-	4384.06	Tb	10	-	-	4380.115	W	8	2	-
4387.412	Re	25 w	-	-	4384.00	Br	-	[20]	Bl	4380.11	Kr	-	[2]	Me
4387.380	Cr	10 d	2	-	4383.909	Xe I	-	[100]	IHu	4380.071	Co I	5 wh	3	-
4387.315	U	15	4	-	4383.880	Ce	2	-	-	4380.060	Ce	30	2	-
4387.299	Mo	3	2	-	4383.79	A	-	[10]	Rt	4379.917	Rh I	60	25	-
4387.213	V I	15	12	-	4383.76	In	-	5 h	Sq	4379.91	Cl I	-	[15]	Ks
4387.16	Gd	3	-	-	4383.740	Ce	4	-	-	4379.876	Nd	4	-	-
4387.101	Th	4	3	-	4383.63	U	4	1	-	4379.841	Ce	2	-	-
4387.058	Ce	5	1	-	4383.555	Ce	8	1	-	4379.813	Eu	5 w	2	-
4386.854	Ti II	8	80	-	4383.547	Fe I	1000	800	S	4379.782	Cr I	15	2	-
4386.835	Ce	15	6	-	4383.5	bh La	15	-	Me	4379.78	Br	-	[6]	Ks
4386.82	Dy	2	-	Ed	4383.45	La II	10	50	m	4379.776	Zr II	10	8	-
4386.8	Bi	-	2 h	Rr	4383.4	bh La	8	-	Me	4379.74	A	-	[80]	Rt
4386.772	W	10	3	-	4383.360	Ru I	12	-	-	4379.7	bh La	20	-	Me
4386.71	Tb	2	-	-	4383.30	Rn	-	[35]	Wa	4379.644	U	2	2	-
4386.700	Ce	8	3	-	4383.266	U	10	1	Hb	4379.64	Ho	-	2	Ex
4386.69	Br	-	[4]	Bl	4383.18	Dy	3	-	Ed	4379.6	bh La	10	-	Me
4386.646	Pr	3	-	-	4383.158	Eu I	100 W	20	-	4379.60	Tb	3 w	-	-
4386.58	Pb II	-	[20]	Sx	4383.137	Gd	30	40	-	4379.561	Pd I	6	2 h	-
4386.54	Kr II	-	[300 hl]	Me	4383.067	Mn	10	-	-	4379.55	O	-	[15 h]	Fl
4386.461	Ni I	3	-	-	4382.963	Ce	4	-	-	4379.525	Cb	2	3	-
4386.42	Tm	200	10	Me	4382.95	B	-	4	Sy	4379.52	Gd	2	-	Kn
4386.420	Pd I	10	-	-	4382.927	Ca	5	2	-	4379.50	Ne II	-	[100]	Bn
4386.37	Ac	-	100	Lx	4382.87	Se II	-	[800]	Bl	4379.44	Xe II	-	[5 whl]	Hu
4386.346	Ce	10 s	-	-	4382.853	Cr I	12	2	-	4379.41	Dy	2	-	-
4386.272	Ru	20	-	-	4382.843	Cb	3	5	-	4379.4	Bi II	25	20	MI
4386.220	Sm	25	5	-	4382.83	U	2	-	-	4379.335	Pr	100 w	2	-
4386.201	Gd	4	-	-	4382.817	Pr	25 w	8 w	-	4379.324	Yt I	4	-	-
4386.07	Tb	25	-	-	4382.773	Fe	10	10	-	4379.26	Tb	4	-	-
4386.068	Ta	50	15	-	4382.737	Nd	15	10	-	4379.25	Ag	5	1	-
4386.0	Pb II	-	[2]	Ea	4382.733	Zr	3	-	-	4379.238	V I	200 R	200 R	-
4385.986	Ir	8	-	-	4382.626	Mn	80 h	-	-	4379.167	Hf	10 h	4 h	-
4385.890	Mo	12	8	-	4382.5	bh C	-	-	L	4379.15	Ho	3	-	Ex
4385.769	Xe I	-	[70]	IHu	4382.492	Cb	3 h	5 h	-	4379.111	Nd	2	1	Kn
4385.663	Nd	40	20	-	4382.45	Tb	25	-	-	4379.081	Ce	3	-	-
4385.66	Tb	15	-	-	4382.418	Pr	30	20	-	4378.97	Br	-	[4]	Bl
4385.648	Ru I	125	50	-	4382.413	Mo	10	20	-	4378.836	Pr	3	-	-
4385.56	Mo	-	20	Ex	4382.340	U	18	5	-	4378.822	Ta	40	2	-
4385.548	U	1	3	-	4382.168	Er	9	1	-	4378.818	Ce	4	-	-
4385.503	Ce	3	-	-	4382.167	Ce	40	12	-	4378.70	Tb	9 w	-	-
4385.481	Pr	8	1	-	4382.16	Hg II	-	[10]	Ps	4378.635	Pr	3	-	-
4385.479	Yt I	3	-	-	4382.070	U	6	1	-	4378.576	Ce	5	-	-
4385.474	Hf II	2 h	4	-	4382.059	Gd	40	-	-	4378.570	Gd	40	-	-
4385.454	Re	20	-	-	4382.052	Eu	2	1	-	4378.527	U	6	2	-
4385.391	Ru I	125	40	-	4381.942	Nd	4	-	-	4378.493	W	25	12	-
4385.381	Fe II	4	10	-	4381.873	Nd	4	-	-	4378.430	Cu II	-	2	Sh
4385.33	P	-	[100 l]	Gu	4381.859	Th	30	30	-	4378.41	O II	-	[10 h]	Mh
4385.324	Ce	4	-	-	4381.853	So I	2	-	-	4378.407	Ce	3	-	-
4385.29	Dy	4	4	Kn	4381.775	Ce	6	2	-	4378.342	Er	9	-	-
4385.27	Kr II	-	[50 whl]	Me	4381.700	Mn	80	20	-	4378.322	Cr	5	1	-
4385.238	Pr	15	5	-	4381.640	Mo	150	150	-	4378.263	Pr	15	3	-
4385.204	La II	8	10	-	4381.622	Pr	15	-	-	4378.230	Sm II	100	100	-
4385.08	A I	-	[5]	Rt	4381.52	Kr II	-	[100 h]	Me	4378.20	Cu I	200 w	30 w	-
4385.08	Te	-	[50]	Bl	4381.392	Th	10	5	-	4378.127	Th	4	1	-
4385.06	I	-	[8]	Ke	4381.385	U	4	3	-	4378.097	La II	40	30	-
4385.056	Ag	-	12	-	4381.359	Ir	3	-	-	4377.956	Cb	10	30	-
4385.02	Tb	2	-	-	4381.30	Tb	8	-	-	4377.95	Ne II	-	[15]	Bl
4385.00	Ne II	-	[15]	Bn	4381.290	Nd	10	3	-	4377.94	Br	-	[12]	Bl
4384.977	Cr I	150	200	-	4381.266	Ru	15	-	-	4377.89	Sb	-	5 wh	Sp
4384.94	Eu	4 w	-	-	4381.26	Mn	5	-	-	4377.846	Pr	4	-	-
4384.94	Ho	3	-	Kn	4381.249	Sm	2	-	-	4377.765	Ni	5	200	-
4384.93	Xe II	-	[30]	Hu	4381.232	Sc I	9	-	-	4377.754	Ne I	-	[2]	Ps
4384.864	Cb	2	5	-	4381.220	Ne I	-	[30]	IMe	4377.71	Kr	-	[40 h]	Me
4384.858	W	25	15	-	4381.19	Ca	-	3	Ad	4377.614	Pr	5	-	-
4384.813	Sc II	25	10	-	4381.126	Cb	3	20	-	4377.549	Cr	25	10	-
4384.797	Pr	40	15	-	4381.112	Cr I	30	25	-	4377.396	Nd	18	3	-
4384.77	U	2	2	-	4381.11	Tm	5	5	Me	4377.34	Tb	2	-	-
4384.76	Ho	3	3 h	Ex	4381.091	Ce	4	-	-	4377.33	Eu	2 w	-	-
4384.722	V I	125 R	125 R	-	4381.082	Pr	20 w	-	-	4377.27	Th	5	-	-
4384.70	Tb	2	-	-	4380.977	Eu	2	1	-	4377.23	Br	-	[4]	Bl
4384.699	Fe I	5	2	-	4380.774	Ir	10	-	-	4377.150	Rb II	-	10	Rr
4384.698	Eu	30	5	-	4380.705	Ce	3	-	-	4377.10	Te	-	[70]	Bl

4377.0—4368.0 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4377.099	Nd	12	3	—	—	4373.829	Er	5	—	—	—	4371.33	Dy	2	—	—	Ed
4377.046	Ce	2	—	—	—	4373.827	V I	20	12	—	—	4371.28	Ca	—	2	—	Ad
4377.006	Ir	100	4	—	—	4373.818	Ce	40	4	—	—	4371.279	Cr I	200	150	—	Me
4376.972	Sm	3	2	—	—	4373.815	Pr	40	10	—	—	4371.25	Kr II	—	[20 hl]	—	—
4376.904	Os	6	—	—	—	4373.78	Xe II	—	—	[50 whl]	Hu	4371.218	Pr	8	2	—	—
4376.880	Ce	4	—	—	—	4373.728	Sm II	2	2	—	—	4371.201	Ru	15	5	—	—
4376.85	Sb II	—	[3]	—	Lg	4373.718	Ir	5	—	—	—	4371.13	Tb	2	—	—	—
4376.798	Cr	20	20	—	—	4373.657	Nd	2 h	—	—	—	4371.130	Co I	25 wh	—	—	—
4376.789	U	6	6	—	—	4373.656	Cr	15	12	—	—	4371.069	Nd	10	3	—	—
4376.783	Fe I	7	1	—	—	4373.633	Co I	15 wh	—	—	—	4371.006	Ce	2	—	—	—
4376.78	C	—	10 h	—	En	4373.59	Tb	3	—	—	—	4370.97	Hf II	30	40	—	—
4376.684	Mo	8	8	—	—	4373.566	Fe I	50	3	—	—	4370.951	Zr II	10	7	—	—
4376.609	Pr	6	—	—	—	4373.459	Sm II	50	50	—	—	4370.92	Tb	3	—	—	—
4376.599	Ru	6	—	—	—	4373.407	U	12	12	—	—	4370.875	Mn	30	—	—	—
4376.48	Yb	10	—	—	—	4373.321	Mo	10	12	—	—	4370.81	Yb	15	40	—	—
4376.440	Nd	15	4	—	—	4373.320	Er	2	—	—	—	4370.808	W	7	1	—	—
4376.43	Tb	12	—	—	—	4373.31	Se	—	[40]	Bl	—	4370.800	Pr	20	7	—	—
4376.412	Eu	3 W	2	—	—	4373.254	Cr I	50	50	—	—	4370.76	A II	—	[30]	—	Rt
4376.194	Hg	—	[50]	—	St	4373.230	V I	25	20	—	—	4370.756	Nd	3	—	—	—
4376.184	Rh I	3	1	—	—	4373.219	Ce	25	—	—	—	4370.73	Ca	—	2	—	Ad
4376.16	Eu	2	—	—	Kn	4373.20	Re	5	—	m	—	4370.661	Os	50	3	—	—
4376.16	Y	—	[20]	—	Ke	4373.070	Zr I	7	—	—	—	4370.651	Ce	12 r	—	—	—
4376.1220	Kr I	—	[800]	—	S	4373.042	Rh I	60	10	—	—	4370.58	Tb	2	—	—	—
4376.076	Gd	8	8	—	—	4373.040	In II	—	[15]	Ps	—	4370.474	Sm II	8	6	—	—
4376.046	Sm II	4	1	—	—	4373.018	Cs II	—	[30]	Sv	—	4370.464	Eu	60 W	2	—	—
4375.96	A	—	[20]	—	Rt	4373.00	Te	—	[50]	Bl	—	4370.415	Ru I	15	—	—	—
4375.932	Fe I	500	200	—	—	4372.945	Pr	3	—	—	—	4370.359	Cb	3	5	—	—
4375.918	Ce	40	5	—	—	4372.91	Cl II	—	[80]	Ks	—	4370.33	Tb	3	—	—	Ed
4375.8	bh La	30	—	—	Me	4372.88	Xe	—	[2 hl]	Hu	—	4370.303	Nd	10	3	—	—
4375.726	Pr	10	2	—	—	4372.874	In II	—	[80]	Ps	—	4370.195	Gd	40	—	—	—
4375.7	bh La	15	—	—	Me	4372.804	In II	—	[15]	Ps	—	4370.138	Mo	5	3	—	—
4375.687	Ce	2	—	—	—	4372.768	Ta	30 h	2	—	—	4370.109	Nd	10	2	—	—
4375.620	Yt I	4	—	—	—	4372.757	U	18	5	—	—	4370.041	Ni I	5	—	—	—
4375.61	Tb	3	—	—	—	4372.729	Nd	12	6	—	—	4369.995	Sb	—	2	—	Sp
4375.60	B	—	2	—	Sy	4372.720	Pr	15 h	—	—	—	4369.96	U	6	—	—	—
4375.543	Co	5	—	—	—	4372.706	Ce	3	—	—	—	4369.96	S	—	[3 h]	—	Hn
4375.425	Ti I	10	1	—	—	4372.645	Cb	2	20 h	—	—	4369.919	Sm II	40	25	—	—
4375.333	Cr	25	30	—	—	4372.64	Tb	3	—	—	—	4369.866	Pr	5	—	—	—
4375.33	Tb	6	—	—	—	4372.572	U	15	18	—	—	4369.775	Gd	250	150	—	—
4375.33	Dy	10	4	—	Kn	4372.528	W	25	10	—	—	4369.774	Fe I	200	100	—	S
4375.304	V I	20	12	—	—	4372.49	C II	—	30	—	Fl	4369.772	Re	4	—	—	—
4375.174	Ce	12	—	—	—	4372.48	Tb	4	—	—	—	4369.77	Ne II	—	[70]	—	Bn
4375.170	Sc I	3	—	—	—	4372.419	Sm II	3	1	—	—	4369.7	bh La	5	—	—	Me
4375.143	Ta	15	5	—	—	4372.401	Ce	35	1	—	—	4369.69	Kr II	—	[200]	—	—
4375.12	Eu	4	2	—	—	4372.385	Pr	10	—	—	—	4369.677	Ti I	25	5	—	—
4375.1	bh Zr	8	—	—	L	4372.382	Ti I	20	6	—	—	4369.662	Re	2	—	—	—
4375.08	In II	—	[2 h]	—	Ps	4372.33	Tb	2	—	—	—	4369.52	Cl I	—	[12]	—	Ks
4375.039	Nd	30	5	—	—	4372.287	Xe I	—	[20]	IMe	—	4369.467	Eu	20 w	2	—	—
4375.014	Mo	8	8	—	—	4372.276	Nd	12	—	—	—	4369.437	Nd	5	—	—	—
4374.997	Ne I	—	[2]	—	Ps	4372.208	Ru I	125	100	—	—	4369.384	Er	12	—	—	—
4374.986	Gd	25	—	—	Kn	4372.207	Eu	10 W	4	—	—	4369.353	Ta	15	10	—	—
4374.975	Sm II	200	200	—	—	4372.157	Ne I	—	[30]	Ps	—	4369.325	Th	10	5	—	—
4374.947	Mn	150	20	—	—	4372.138	Nd	2 h	—	—	—	4369.28	O II	—	[50]	—	Fl
4374.935	Yt II	150	150	—	—	4372.128	Mo	10	10	—	—	4369.25	Br I	—	[2]	—	Ks
4374.925	Er	40 wh	25 wh	—	—	4372.127	Ir	40 w	—	—	—	4369.243	Ce	10	1	—	—
4374.92	Co I	10	3	—	—	4372.04	Tb	20	—	—	—	4369.20	Xe	—	[100 wh]	—	Hu
4374.923	Nd	20	5	—	—	4372.01	Gd	3	—	Kn	—	4369.168	Gd	50	20	—	—
4374.90	Lu	5	—	—	Me	4372.01	U	5	—	—	—	4369.062	V I	9	5	—	—
4374.888	Mo	8	5	—	—	4372.00	Br	—	[8]	Bl	—	4369.050	Pr	5 w	—	—	—
4374.870	K II	—	[2]	—	Dm	4372.0	bh La	40	—	Me	—	4369.047	W	5	2	—	—
4374.87	A	—	[5]	—	Rt	4371.921	Pt	—	2 h	—	—	4369.045	Mo	40	25	—	—
4374.83	Tb	6	—	—	Ed	4371.9	bh La	20	—	Me	—	4368.939	Ti I	20	—	—	—
4374.822	Ti II	7	35	—	—	4371.856	Ce	2	—	—	—	4368.910	Cr	5	—	—	—
4374.80	Rh I	1000 W	500	—	—	4371.8	Rb	—	[20]	Dr	—	4368.886	Ce	3	—	—	—
4374.80	Dy	12	4	—	Kn	4371.796	Ne I	—	[2]	Ps	—	4368.878	Mn	50	—	—	—
4374.790	Th	15	10	—	—	4371.760	U	18	1	—	—	4368.772	Mo	5	4	—	—
4374.783	Cb	3	5	—	—	4371.738	W	12	3	—	—	4368.77	Cs	—	[10]	—	Bs
4374.760	Ce	3	—	—	—	4371.710	Ce	2	—	—	—	4368.767	W	10	2	—	—
4374.61	Ca	10	2 h	—	Ad	4371.69	B	—	2	Sy	—	4368.632	Nd	50	15	—	—
4374.455	Sc II	100	25	—	—	4371.621	Zr	4	—	—	—	4368.598	V I	15	9	—	—
4374.43	Tb	3	—	—	—	4371.614	Pr	125	40 w	—	—	4368.53	Gd	5	—	—	Kn
4374.429	Co I	2 wh	—	—	Kb	4371.59	O II	—	[10 h]	Mh	—	4368.472	U	3	—	—	—
4374.410	Pr	50	15	—	—	4371.59	C II	—	6	—	Fl	4368.432	Cb	15	30	—	—
4374.28	C II	—	40	—	—	4371.571	Ce	3	—	—	—	4368.42	Eu	8 w	2	—	—
4374.254	Gd	20	20	—	—	4371.55	Cl I	—	[2]	Ks	—	4368.36	A	—	[5]	—	Ms
4374.241	Er	7	—	—	—	4371.546	Eu	4 w	—	—	—	4368.327	Pr	125	90	—	—
4374.24	Tb	8	—	—	—	4371.53	Rn	—	[30]	Rc	—	4368.312	Ni I	5	—	—	—
4374.24	Dy	12	4	—	Kn	4371.500	Sm II	3	1	—	—	4368.30	O I	—	[1000]	—	Ps
4374.24	Se II	—	[40]	—	Kh	4371.44	Yt	2	—	Me	—	4368.252	Cr I	15	6	—	—
4374.210	Ta	15	15	—	—	4371.435	Er	5	—	—	—	4368.242	U	3	3	—	—
4374.158	Cr	50	60	—	—	4371.43	Ho	3	1 h	Ex	—	4368.234	Ce	8	1	—	L
4374.131	Th	4	1	—	—	4371.4	bh C	—	—	—	—	4368.2	bh Zr	8	—	—	En
4374.085	Ce	3	—	—	—	4371.38	As II	—	50	—	Ro	4368.14	C II	—	[30 h]	—	—
4373.907	Th	10	5	—	—	4371.36	A	—	[80]	Rt	—	4368.09	Te	—	[30]	—	Bl
4373.839	Gd	200	80	—	—	4371.33	C I	—	30	—	—	4368.042	V I	12	8	—	—

Wave-length	Element	Intensity Arc Spk., [Dis.]	R	Wave-length	Element	Intensity Arc Spk., [Dis.]	R	Wave-length	Element	Intensity Arc Spk., [Dis.]	R
4368.032	Sm II	60	60	4364.65	In II	—	[2]	4361.710	Sr I	20	—
4367.967	Cb	2	50 h	4364.61	Kr II	—	[4 hl]	4361.661	Ce	18	2
4367.906	Fe I	60	70	4364.510	Pr	3	—	4361.659	Er	2	1
4367.905	Hf II	25	20	4364.474	Mo	8	6	4361.653	Cb	2	2
4367.90	Tm	20	10	4364.463	Pt I	3	2	4361.576	Eu	10 w	2
4367.87	A II	—	[10]	4364.441	Ce	3 l	—	4361.538	W	7	12
4367.66	Cs	—	[10]	4364.417	U	6	4	4361.527	Pr	10	2
4367.658	Ti II	8	25	4364.4	bh Zr	12	—	4361.404	Nd	10	3
4367.6	bh Sr	2	—	4364.28	Dy	6	8	4361.404	Mo	6	6
4367.582	Fe I	100	50	4364.216	V I	15	10	4361.402	V I	12	9
4367.582	Re	80	—	4364.18	Ho	3	—	4361.39	Dy	6	4
4367.558	Ce	6	1	4364.163	Pr	8 d	—	4361.352	Ce	10	—
4367.390	Cb	1	10 h	4364.143	Nd	15	8	4361.317	Th	12	10
4367.38	Sb II	—	3	4364.142	Cr I	8	—	4361.276	Re	3 w	—
4367.313	Ce	5 s	—	4364.14	Gd	10	—	4361.27	Te	—	[50]
4367.31	Tb	30	—	4364.129	Re	15	—	4361.261	Pr	20	4
4367.233	Pr	25 w	5 w	4364.12	Ca	—	2	4361.211	Ru	40	50
4367.160	Nd	10	2	4364.115	Ce	5	—	4361.156	U	3	4
4367.10	As	—	5	4364.104	Ru	6	—	4361.142	Ti I	10	1
4367.05	Xe II	—	[15 wh]	4364.06	Dy	4	—	4361.099	Mo	3	2
4367.001	Ce	25	4 s	4364.059	Sm	4 w	4 w	4361.067	W	10	3
4366.974	Th	5	3	4364.038	Yt II	2	—	4361.067	Sm II	30	20
4366.94	Tb	8 w	—	4364.02	Te	—	[400]	4361.031	Co I	2	—
4366.906	O II	—	[100]	4364.0	Be	—	50	4361.025	Be II	—	[40]
4366.90	V II	—	5 h	4363.988	Pr	10	—	4360.956	Pr	2	—
4366.85	U	6	1 h	4363.93	Ho	2	3	4360.926	Gd	200	—
4366.73	Dy	8	2	4363.92	Tb	2	—	4360.847	La I	3	—
4366.725	Er	8 d	—	4363.825	U	5	2	4360.830	Ta	40 s	5
4366.7	bh Ca	5	—	4363.794	A I	—	[80]	4360.829	Co I	10	2
4366.693	Pr	5	—	4363.65	Tm	20	15	4360.818	Nd	25	8
4366.63	Ca	—	2	4363.644	Mo	5	200	4360.807	Zr	25	2
4366.536	Mo	25	25	4363.525	V I	20	12	4360.712	Sm II	100	60
4366.535	Ce	2	—	4363.524	Ne I	—	[70]	4360.690	Be II	—	[35]
4366.52	Eu	10 W	—	4363.487	Ce	3	—	4360.63	Tb	4	—
4366.447	Zr I	25	2	4363.446	Sm II	60	50	4360.582	V I	15	12
4366.391	Nd	12 d	3 d	4363.4	bh B	40	—	4360.568	Pr	4	—
4366.38	Tb	2	—	4363.385	Ce	4	—	4360.496	La I	5	—
4366.348	W	4	1	4363.359	Re	4 w	—	4360.493	Ti I	60	15
4366.315	Nd	12 d	3 d	4363.30	Cl I	—	[12]	4360.49	S	—	[8]
4366.30	Ra	—	[4]	4363.30	Yb	—	2	4360.443	Ce	15	1
4366.26	Kr II	—	[6 hl]	4363.275	Cs II	—	[50]	4360.375	Re	15	—
4366.217	Co I	2	5 h	4363.25	Mn	20	5	4360.337	Er	2	—
4366.114	Ce	2	—	4363.228	Ne I	—	[2]	4360.32	Xe	—	[2 wh]
4366.11	Dy	3	4	4363.219	Pr	25	8	4360.31	In II	—	[10]
4366.088	Pr	30 w	—	4363.191	U	2	—	4360.282	Pd I	10 h	—
4366.069	W	12	4	4363.134	Cr	25	35	4360.21	Dy	5	4
4366.030	Yt I	20	—	4363.100	Ce	3	—	4360.178	Ce	10	1
4366.00	Tb	10	—	4363.062	La II	8	3	4360.16	Tb	25	—
4365.965	W	12	4	4363.017	Mo	4	3	4360.12	Gd	3	—
4365.953	Sm	7	1	4363.0	bh Zr	4	—	4360.090	W	2	4
4365.909	Th	4	2	4362.981	Pr	50	20	4359.992	Cr	15	2
4365.9	bh B	25	—	4362.96	K II	—	[20]	4359.945	Ce	2	—
4365.896	Mo	3	4	4362.929	U	6	8	4359.93	Tm	300	30
4365.760	Pr	5	—	4362.92	Dy	3	2	4359.90	As	—	10
4365.745	V I	9	6	4362.911	Sm	60	25	4359.854	Cb	50	50
4365.72	Ne II	—	[15]	4362.88	Ca	—	2	4359.805	Mn	25	—
4365.674	Os	60	4	4362.817	Mo	3	2	4359.795	Pr	100	40
4365.630	Ce	2	—	4362.789	U	2	3	4359.736	Zr II	8	8
4365.62	Dy	2	—	4362.710	Mo	5	5	4359.67	A II	—	[2]
4365.60	Br	—	[200]	4362.702	Ru I	6	—	4359.654	Sc	12	—
4365.553	U	10	8	4362.690	Ne I	—	[30]	4359.644	Gd	15	—
4365.520	Ce	4	—	4362.6423	Kr I	—	[500]	4359.631	Cr I	200	150
4365.377	Sm	5	4	4362.513	U	3	3	4359.629	Ce	2	—
4365.37	Hf	8	8	4362.477	I II	—	[15]	4359.627	Mn	15	—
4365.362	Cu II	—	6	4362.45	Tb	4	—	4359.621	Mo	15	15
4365.349	Ce	2	—	4362.444	Ce	4	—	4359.585	Ni I	100	10
4365.328	Pr	6	—	4362.409	Sm II	2	2	4359.580	Ir	12	—
4365.24	Mn	25	5	4362.29	Dy	3	2	4359.554	Ba	15	3
4365.225	Nd	10	2	4362.262	U	15	18	4359.473	U	2	3
4365.2	bh C	—	—	4362.260	Er	4	1	4359.434	Co I	15	1
4365.15	Br I	—	[15]	4362.146	Pr	10 w	—	4359.376	Th	4	2
4365.1	bh Zr	12	—	4362.121	Ir	25	2	4359.368	Ce	2	—
4365.067	U	2	2	4362.07	A II	—	[20]	4359.34	Tb	2 d	—
4365.06	In II	—	[15]	4362.05	U	30	3	4359.311	Re	12	—
4364.983	Pr	5	—	4362.033	Sm II	150	150	4359.244	Nd	15	3
4364.940	Nd	8	2	4362.023	Mo	8	5	4359.162	Gd	20	—
4364.916	Sc	12	—	4362.0	bh Zr	8	—	4359.107	Pr	70	25
4364.842	Re	15	—	4361.99	Mo	—	20	4359.09	Ac	—	30
4364.838	Ta	15	8	4361.945	Zr	4	—	4359.077	Sc	12	—
4364.786	W	25	12	4361.919	Co I	2 h	—	4359.068	Ce	15	2
4364.773	Pr	20 w	—	4361.865	Nd	5	—	4359.05	Tb	2	—
4364.77	In II	—	[10]	4361.846	Ir	4	—	4359.02	Ca	—	[10]
4364.698	Mo	4	4	4361.818	Pr	15	4	4358.932	Th	3	2
4364.666	La II	50	50	4361.815	W	20	9	4358.82	Ti II	—	[5]
4364.658	Ce	30	6	4361.775	Th	4	3	4358.816	Ne I	—	[2]

4358.7—4349.0 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4358.77	Tb	2	-	-	4355.911	Ni I	15	-	-	4352.5	Rb	-	[8]	Dr
4358.742	Zr I	10	-	-	4355.842	Ir	4	-	-	4352.486	Nd	10	2	-
4358.74	Ho	3	-	Ex	4355.831	Sm	3	-	-	4352.438	V	5	6	-
4358.726	Yt II	60	50	-	4355.813	Ce	2	-	-	4352.417	Re	2 w	-	-
4358.699	Nd	15	8	-	4355.753	Pr	5	1	-	4352.323	Yt I	5	-	-
4358.688	Re I	80	-	-	4355.741	U	10	20	-	4352.25	Sb	-	6 h	Sp
4358.654	U	2	3	-	4355.68	B	-	6	Sy	4352.25	As II	-	200	Ro
4358.654	Ta	10	-	-	4355.632	U	6	10	-	4352.241	Eu	4	2	-
4358.645	Sc I	10	-	-	4355.493	Nd	5	-	-	4352.23	A	-	[30]	Rt
4358.599	Pd I	25	-	-	4355.478	Kr II	-	[3000]	Me	4352.22	P	-	[30]	Gu
4358.556	Th	4	4	-	4355.431	Ce	6	-	-	4352.140	Sc	9	-	-
4358.551	Mo	20 w	10 w	-	4355.349	Nd	12	4	-	4352.096	Sm	125	100	-
4358.505	Fe I	70	20	S	4355.327	Th	12	8	-	4352.047	Pr	4	2	-
4358.50	In II	-	[2]	Ps	4355.308	Ti I	10	1	-	4351.982	Ce	2 h	-	-
4358.461	Dy	25	4	-	4355.21	Mo	-	20	-	4351.91	Mg I	15	2	Fl
4358.43	Tb	3	-	-	4355.190	Pr	25	5	-	4351.849	Pr	80	60	-
4358.42	Ca	-	5	Ad	4355.165	W	15	9	-	4351.812	Ce	8	-	-
4358.35	Hg I	3000 w	500	-	4355.157	Ce	2 s	-	-	4351.770	Cr I	300	300	-
4358.336	Pt I	2	-	-	4355.15	Se II	-	[40]	Bl	4351.762	Fe II	30	30	-
4358.333	Th	3	-	-	4355.145	Ta	80	10 h	-	4351.712	Re	2	-	-
4358.324	Mo	-	40	-	4355.097	Eu I	150	20	-	4351.645	Er	4	-	-
4358.279	Ir	8	-	-	4355.096	Ca I	50	-	IWg	4351.58	Tb	15 d	-	-
4358.27	N	-	[250]	Du	4355.07	Tb	2	-	-	4351.571	Cb	10	20	-
4358.172	Er	4	-	-	4354.979	V I	20	15	-	4351.552	Fe I	30	5	-
4358.169	Nd	50	20	-	4354.912	Pr	80	30	-	4351.549	Mo	15	15	-
4358.141	Os	9	1	-	4354.898	W	6	2	-	4351.528	Os	9	2	-
4358.133	Ta	3	10 h	-	4354.852	Ce	8 l	-	-	4351.5	Pb II	-	[3]	Ea
4357.980	Os	12	-	-	4354.804	La I	40	3	-	4351.388	Ce	2	3 wh	-
4357.97	Re	15	-	-	4354.802	Ru I	12	-	-	4351.3607	Kr I	-	[100]	S
4357.92	In II	-	[2]	Ps	4354.787	Eu	100 w	2	-	4351.299	Ir	50	-	-
4357.918	Ne I	-	[5]	Ps	4354.721	W	6	2	-	4351.295	Nd	30	10	-
4357.917	La I	5	2 h	-	4354.692	Mo	5	5	-	4351.275	O II	-	[125]	Fl
4357.907	Ce	12	1	-	4354.64	Se II	-	[2]	Bl	4351.265	Eu	3 w	-	-
4357.891	Sm	3	2 h	-	4354.609	Sc II	60	10	-	4351.22	Br	-	[20]	Bl
4357.867	Mo	6	2	-	4354.548	U	10	8	-	4351.2	bh Ca	5	-	L
4357.80	Gd	2	-	Kn	4354.51	Tb	2	-	-	4351.185	Nd	15	5	-
4357.761	Eu	7	2	-	4354.489	Th	3	-	-	4351.179	Er	2	-	-
4357.726	Yt I	10	-	-	4354.464	Os	9	1	-	4351.18	Tm	20	-	-
4357.627	U	3	3	-	4354.419	Ce	6	-	-	4351.15	Hf	8	-	-
4357.587	Th	8	4	-	4354.399	La II	80	100	-	4351.051	Cr I	100	150	-
4357.574	Fe	2	3	Do	4354.365	U	4	6	-	4351.02	Mo	5 h	5 h	-
4357.572	Nd	3	-	-	4354.35	Yt	2	-	Me	4351.02	Kr II	-	[40 wh]	Me
4357.525	Cr	12	4	-	4354.23	Kr	-	[2]	Me	4351.008	Pd I	5 h	-	-
4357.503	Pr	25	5	-	4354.131	Ru I	25	20	-	4350.996	Ta	10	-	-
4357.49	Tm	6	2	Me	4354.062	Ti I	25	5	-	4350.99	Tm	5	-	-
4357.47	Tb	5	-	-	4354.02	Gd	20	-	Kn	4350.910	Pr	4	-	-
4357.452	V I	7	6	-	4353.983	Cr	20	3	Hi	4350.834	Ti II	6	30	-
4357.39	Er	2	-	-	4353.90	Kr	-	[2]	Me	4350.834	Th	6 h	2	-
4357.335	Mo	5	15	-	4353.866	Ce	5	-	-	4350.822	V I	8	4	-
4357.33	Se	-	[20]	Bl	4353.821	Co I	4	2	-	4350.811	Sm	3	1	-
4357.298	Ne I	-	[2]	Ps	4353.798	Pr	10	2	-	4350.74	Tb	5	-	-
4357.222	Nd	8	-	-	4353.79	Gd	10	-	-	4350.733	Er	15	-	-
4357.173	Co I	10	-	-	4353.639	Er	5	-	-	4350.73	Ho	40	15	Kn
4357.125	Ce	3 s	-	-	4353.633	Yt	2	-	-	4350.508	Hf II	20	40	-
4357.091	Re	10	-	-	4353.615	Nd	5	1	-	4350.500	Ce	3	-	-
4356.99	Hf	10	-	-	4353.559	Pr	5	-	-	4350.460	Sm II	150	150	-
4356.962	Ce	4	-	-	4353.517	Eu	2	1	-	4350.399	Pr	70	25	-
4356.93	Br II	-	[4]	Bl	4353.513	Ce	3	-	-	4350.375	Ba	40	20	Sz
4356.922	Nd	10	2	-	4353.404	Th	8	5	-	4350.339	Mo	50	40	-
4356.904	Co I	3	-	-	4353.382	Ir	20	-	-	4350.324	Ce	2	-	-
4356.882	U	1	2	-	4353.370	Ce	6	2	-	4350.203	Nd	10	5	-
4356.84	Tb	60	-	-	4353.34	Hf	8	6 h	-	4350.119	Eu	10 w	-	-
4356.807	Al II	-	[6]	Sy	4353.331	V I	6	5	-	4349.968	V II	1	3	-
4356.793	V I	2	4	-	4353.310	Mo	25	25	-	4349.789	Ce II	40	5	-
4356.760	Cr I	15	8	-	4353.298	W	7	2	-	4349.773	Er	3	-	-
4356.748	Ce	10	-	-	4353.272	Cb	3 h	5	-	4349.74	Hf	8	3	-
4356.74	Ho	8	8	Ex	4353.246	Nd	8	-	-	4349.715	Eu	20 w	-	-
4356.72	Se II	-	[12]	Bt	4353.19	Tb	50	-	-	4349.698	Ru I	20	-	-
4356.711	Al II	-	[7 wh]	Sy	4353.175	Pr	10	1	-	4349.672	Pr	15	-	-
4356.695	Er	12	-	-	4353.17	B	-	2	Sy	4349.60	Tb	12	-	-
4356.672	Pr	5	-	-	4353.132	Ce	3	-	-	4349.60	Rn I	-	[5000]	Rs
4356.65	Yb	4	-	Me	4353.108	W	8	4	-	4349.566	Nd	15	-	-
4356.626	Mn	20	5	-	4353.033	Nd	5	1	-	4349.55	Kr	-	[2]	Me
4356.548	U	5	2	-	4353.02	As II	-	100	Ro	4349.485	Eu	2	2	-
4356.327	Hf	30	4	-	4352.971	Ce	2	-	-	4349.435	O II	-	[300]	Fl
4356.287	Cr	8	1	-	4352.95	Yb	8 h	-	-	4349.41	S	-	[4]	Bl
4356.222	Pr	3	-	-	4352.883	Mo	5	3	-	4349.390	Ce	3 W	6 wh	-
4356.157	Ce	2	-	-	4352.872	V I	10	6	-	4349.388	U	3	5	-
4356.13	Mn	10	-	-	4352.737	Fe I	300	150	S	4349.29	Te	-	[30]	Bl
4356.13	Dy	3 h	-	Kn	4352.735	Yt I	7	-	-	4349.25	Eu	2 w	-	Kn
4356.09	Tb	20	-	-	4352.706	Ce I, II	40	5	-	4349.224	Mo	6	4	-
4356.07	Mo	-	30	-	4352.7	Pb II	-	[10]	Ea	4349.175	Rh I	4	2	-
4356.018	Nd	30	15	-	4352.566	Hf	10	6	-	4349.107	Ce	2	-	-
4355.945	Ce	2	-	-	4352.562	Ir	50	2	-	4349.101	Nd	10	2	-
4355.943	V I	25	20	-	4352.513	Pr	5	1	-	4349.09	Dy	2	2	Ed

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4349.029	Cb	10	10	-	4345.9	bh Sr	3	-	L	4342.56	Xe II	-	[4 whl]	Hu
4348.939	Fe I	8	2	-	4345.853	Sm II	100	100	-	4342.521	Os	4	-	-
4348.933	Zr I	8	-	-	4345.835	W	10	3	-	4342.52	W	-	10	-
4348.835	Cr	4 wh	-	-	4345.832	Ce	5	-	-	4342.500	Tb	50 w	-	Kn
4348.790	Yt I	100	-	-	4345.809	Cr	15	-	-	4342.49	Eu	4 w	-	-
4348.68	Tb	2	-	-	4345.762	Ne I	-	[2]	Ps	4342.487	Ce	12	1	-
4348.654	Cb	15	20	-	4345.681	Mo	2	3	-	4342.444	Rh I	15	4	-
4348.600	Ce	4	-	-	4345.570	O II	-	[125]	Fl	4342.444	Th	3	1	-
4348.528	So I	10	-	-	4345.566	Zr I	4	-	-	4342.42	Te	-	[15]	Bl
4348.526	Nd	25	15	-	4345.518	Cb	2	5	Me	4342.384	Sm	2	3 h	-
4348.342	Ce	3	-	-	4345.513	Re	2	-	-	4342.379	U	2	3	-
4348.341	Er	10	-	-	4345.503	Pr	4	5 h	-	4342.273	Th	8	6	-
4348.33	Tb	9	-	-	4345.489	Nd	3	-	-	4342.239	Zr II	4	-	-
4348.3	Rb	-	[80]	Dr	4345.479	Ne I	-	[2]	Ps	4342.204	V I	15	10	-
4348.194	Ce II	4	-	-	4345.466	Rh I	10	4	-	4342.191	Gd	200	200	-
4348.168	Pr	8	2 h	-	4345.457	Ce	8	3 wh	-	4342.159	Re	3	-	-
4348.126	Eu	4 w	-	-	4345.451	Se II	-	[25]	Bl	4342.140	Ce II	10	-	-
4348.120	W II	50	40	-	4345.347	Cb	5	8	-	4342.137	U	3	3	-
4348.11	A	-	[500 h]	Rt	4345.285	Cb	5	8	-	4342.105	I II	-	[30]	Ke
4348.102	Zr	4	2 h	-	4345.214	Ce	2	-	-	4342.071	Nd	20	6	-
4348.07	C	-	[30]	Jn	4345.167	A I	-	[1000]	I	4342.068	Ru I	60	40	-
4348.06	Ca	-	3	Ad	4345.086	Rh I	3	1	-	4342.009	Cr	8	-	-
4347.892	Zr I	40	5	-	4345.085	Cr	30	3	-	4342.0	bh B	25	-	L
4347.851	Fe I	5	2	-	4345.076	Er	2	-	-	4341.98	Lu	3	30 hl	Ma
4347.802	Al II	-	[18]	Sy	4345.05	Th	3	2	-	4341.964	Mo	5	4	-
4347.801	Sm II	150	60	-	4345.03	Tb	2	-	-	4341.95	Tb	2	-	-
4347.79	Se II	-	[8]	Bl	4344.963	W	8	1	-	4341.94	O II	-	[30 h]	Mh
4347.785	Al II	-	[20]	Sy	4344.927	Nd	6	-	-	4341.9	Gd	2 h	-	Kn
4347.72	Dy	5	4	Kn	4344.924	Ce II	6	-	-	4341.757	Nd	6	2	-
4347.710	Ce	4	-	-	4344.895	Pr	7	2	-	4341.752	U	-	8	-
4347.598	Ce	4	-	-	4344.835	Sb II	-	5 h	-	4341.688	U	50	50	-
4347.59	Hg	2 h	2 h	-	4344.77	B	-	4	Sy	4341.490	Zr I	3	-	-
4347.520	Mn	10	-	-	4344.750	Ce	3	-	-	4341.450	Cr I	12	-	-
4347.509	W	10	3	-	4344.74	Ca	-	2 h	-	4341.421	Mo	25	25	-
4347.504	Cr	30	1	-	4344.672	Pd I	5	-	-	4341.42	Ne II	-	[15]	Bl
4347.496	Hg I	200	50	-	4344.660	Mo	20	20	-	4341.375	Ti II	12	40	-
4347.490	Pr	100	40	-	4344.655	Re	2	-	-	4341.375	Pr	10	1	-
4347.429	O II	-	[70]	Fl	4344.648	Yt I	5	-	-	4341.33	Kr II	-	[8 whl]	Me
4347.424	U	2	2	-	4344.638	W	5	1	-	4341.3	Na I	3	-	Fo
4347.389	Ce	4	-	-	4344.623	Th	5 h	1 h	-	4341.292	Gd	200	125	-
4347.372	Zr	3	-	-	4344.62	Dy	2	-	Ed	4341.185	Cr	8	-	-
4347.320	Gd	100	100	-	4344.507	Cr I	400 r	300	-	4341.134	W	4	2	-
4347.316	Al II	-	[6]	Sy	4344.5	Na I	3	-	Fo	4341.133	Zr I	50	4	-
4347.310	Cb	4 w	3	-	4344.5	Bi II	-	2	MI	4341.110	Ca	5	1	-
4347.308	Er	6	1 h	-	4344.47	Tm	5	-	Me	4341.09	Dy	2	-	Ed
4347.269	Eu	5 w	-	-	4344.45	Gd	25	25	Kn	4341.042	Ru	7	-	-
4347.242	Sm II	2	2	-	4344.334	Pr	150 w	80 w	-	4341.032	Th	6	6	-
4347.225	Zr I	5	-	-	4344.334	Th	12	8	-	4341.013	V I	60	30	-
4347.223	Al II	-	[8]	Sy	4344.312	Ta	20	8	-	4341.01	Tb	10	-	-
4347.221	Nd	5	1	-	4344.305	Gd	50	-	-	4340.918	Er	8 d	-	-
4347.196	Th	6 w	4 w	-	4344.290	Ce	6	-	-	4340.888	Pr	5	-	-
4347.192	U	18	18	-	4344.286	Ti II	12	50	-	4340.746	Mo	20	20	-
4347.076	Ce	3	-	-	4344.26	Dy	4	-	Ed	4340.727	La I	50	3	-
4347.002	W	20	7	-	4344.22	Yb	10	-	-	4340.704	U	1	2	-
4346.996	Rb II	-	8	Rr	4344.21	Tb	6	-	-	4340.64	Ra II	-	[1000]	Rs
4346.96	Ho	3	1 h	Ex	4344.179	U	2	2	-	4340.63	Tb	40	2	-
4346.92	I I	-	[35]	Db	4343.974	Nd	2	-	-	4340.59	Bi II	-	40 h	Om
4346.918	Al II	-	[4]	Sy	4343.97	Mn	100	30	-	4340.59	Eu	8 w	1	Kn
4346.895	Mo	2	3	-	4343.954	Th	10	6	-	4340.568	Ce	12	1	-
4346.892	Pr	30	2 h	-	4343.891	Pr	10	3	-	4340.53	Ti II	-	[20]	El
4346.882	Nd	6	2	-	4343.871	Ce	4	-	-	4340.47	Dy	3	-	Ed
4346.866	Al II	-	[2]	Sy	4343.86	Tb	4	-	-	4340.465	H I	-	[200]	m
4346.86	Te	-	[15]	Bl	4343.786	Ti I	10	1	m	4340.446	U	5	8	-
4346.833	Cr	200	40	-	4343.770	Nd	8	3	-	4340.432	Pb	10	-	Kl
4346.66	Ho	3	-	Ex	4343.705	Fe	12	2	-	4340.420	Ne I	-	[2]	Ps
4346.626	Gd	50	20	-	4343.663	Pt I	3	-	-	4340.343	Ru	10	-	-
4346.610	Ti I	15	1	-	4343.634	Hg I	20	5	-	4340.29	O II	-	[10 h]	Mh
4346.582	Rb II	-	20	Rr	4343.62	Cl II	-	[100]	Ks	4340.256	Ne I	-	[2]	Ps
4346.556	Fe	50	10	-	4343.606	Th	4	4	-	4340.255	Pr	4	-	-
4346.556	Ir	6	-	-	4343.558	Ce	6	-	-	4340.2	bh Zr	4	-	L
4346.517	Zr I	10	-	-	4343.535	W	5	-	-	4340.130	Cr I	80	30	-
4346.48	Tm	6	-	Me	4343.497	Nd	10	-	-	4340.018	Ti I	12	-	-
4346.479	Sm II	30	15	-	4343.41	Ca	-	2	-	4339.977	K II	-	[20]	Dm
4346.476	Ru I	15	-	-	4343.401	Zr I	3	-	-	4339.938	Eu	3 w	1	-
4346.459	Gd	150	60	-	4343.389	Pr	3	-	-	4339.934	La	20	-	-
4346.450	Th	4	1	-	4343.29	Tb	10	-	-	4339.929	Sm	8	3	-
4346.33	Dy	5	4	Ed	4343.257	Fe	20	3	-	4339.90	Tb	8	-	-
4346.291	W	5	2	-	4343.252	Eu	20 W	-	-	4339.823	Mo	15	15	-
4346.245	Pr	25	-	-	4343.163	Cr I	60	12	-	4339.8	Bi II	-	[12 w]	MI
4346.204	Mo	15	10	-	4343.038	Zr I	2	-	-	4339.78	Ne II	-	[15]	Bn
4346.115	Cb	3	5	-	4342.832	V I	50	30	-	4339.718	Cr I	150	150	-
4346.111	Ti I	40	7	-	4342.815	Cb	5	10	-	4339.681	Re I	20	-	-
4346.036	Ne I	-	[15]	Pa	4342.810	Pr	40	5 w	-	4339.68	Pr	20	2	-
4345.961	Ce II	6	2	-	4342.792	W	6	2	-	4339.68	Dy	15	8	Kn
4345.904	Eu	80 W	1	-	4342.595	Tb	25	-	-	4339.637	Er	15	-	-

4339.6—4329.9 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4339.63	Tb	8	-	-	-	4336.48	Yb	5 l	3 h	-	-	4332.708	Ce	35 s	4	-	-
4339.625	Co I	50	-	-	-	4336.424	Ru I	12	-	-	-	4332.64	Sb II	-	[3]	-	Lg
4339.6	bh B	25	-	-	L	4336.339	In II	-	[15]	Ps	-	4332.575	Nd	6	-	-	-
4339.59	Se I	-	-	[200]	Rd	4336.26	Cl II	-	[45]	Ks	-	4332.569	Cr	125	2	-	-
4339.555	Zr II	3	1	-	-	4336.255	Ce	25	-	6	-	4332.55	Ho	3	1 h	-	Ex
4339.55	Ti II	-	-	[8]	El	4336.221	Ne I	-	[50]	Ps	-	4332.54	Te	-	-	[15]	Bl
4339.452	W	8	3	-	-	4336.199	Ta	3	3	-	-	4332.506	Mo	15	15	-	-
4339.450	Cr I	300 r	300	-	-	4336.130	Sm	100	30	-	-	4332.504	Ru	6	-	-	-
4339.353	Sm	2	2	-	-	4336.108	Zr I	6	-	-	-	4332.487	Pr	30	2	-	-
4339.317	Ce	25	5	-	-	4336.088	Ce	2	-	-	-	4332.471	Ce	3	-	-	-
4339.235	Hg I	150	20	-	-	4336.020	Rh I	2	1	-	-	4332.470	Nd	4	-	-	-
4339.234	Mo	15	12	-	-	4336.01	Dy	3	-	Kn	-	4332.403	Eu	2 w	1	-	-
4339.11	Yb	4	10	-	-	4336.00	Cu I	2	-	-	-	4332.379	V I	8	7	-	-
4339.066	W	6	3	-	-	4335.99	Tm	4	6	Me	-	4332.332	Ir	10	-	-	-
4339.059	Ce	3	-	-	-	4335.969	Pr	8	1	-	-	4332.319	Ce	2	-	-	-
4339.997	Er	9	-	-	-	4335.88	Tb	5	-	-	-	4332.261	Re I	50	-	-	-
4339.960	Sm	10	2	-	-	4335.859	Re	10	-	-	-	4332.132	W	15	7	-	-
4338.824	Mn	15	-	-	-	4335.81	Xe II	-	[5]	Hu	-	4332.13	Tb	40	2	-	-
4338.799	Cr	50	8	-	-	4335.78	Rn I	-	[35]	Rs	-	4332.11	Dy	2	-	-	Ed
4338.753	Os	9	1	-	-	4335.756	Th	10	10	-	-	4332.06	A	-	-	[80]	Rt
4338.714	Mo	12	12	-	-	4335.748	Pr	80	20	-	-	4332.024	K	-	-	[10]	Dm
4338.697	Nd	40	15	-	-	4335.742	U	10	1	-	-	4331.995	Al II	-	-	[2]	Sy
4338.694	Pr	100	50	-	-	4335.74	Tb	6	-	Ed	-	4331.941	Ce	6	-	-	-
4338.69	He II	-	-	[3]	Ps	4335.57	W	2	15	-	-	4331.931	Th	8	4	-	-
4338.678	Ru	7	-	-	-	4335.52	Se II	-	[25]	Bt	-	4331.93	Mg II	3	-	-	Fl
4338.57	Si	-	4	-	Sy	4335.487	Ce	6	-	-	-	4331.84	O II	-	-	[15]	Mh
4338.564	Mo	6	5	-	-	4335.459	Eu	2	1	-	-	4331.828	U	13	2	-	-
4338.52	I	-	-	[3]	Ke	4335.411	Cs	-	[8]	Sv	-	4331.758	Ce	20	2	-	-
4338.484	Ti I	12	1	-	-	4335.408	Ce	2	-	-	-	4331.645	Ni I	200	12	-	-
4338.46	Eu	3 w	-	-	Kn	4335.357	W	10	2	-	-	4331.63	W	4	-	-	-
4338.45	Tb	100	3	-	-	4335.348	Sb II	-	4 wh	-	-	4331.551	Ir	4	-	-	-
4338.45	Dy	3	-	-	-	4335.337	A I	-	[800]	I	-	4331.550	V II	1	3	-	-
4338.412	Cr	35	4	-	-	4335.313	Th	3	2	-	-	4331.5	Rb	-	-	[10]	Dr
4338.40	I	-	-	[8]	Bl	4335.292	Gd	10	-	-	-	4331.472	Pr	5	1	-	-
4338.309	U	3	4	-	-	4335.279	U	8	1	-	-	4331.457	U	8	-	-	-
4338.285	Pr	8	-	-	-	4335.200	Nd	4	-	-	-	4331.443	Sm	25	4	-	-
4338.279	W	10 r	3	-	-	4335.148	Hf II	8	8	-	-	4331.422	Nd	12	-	-	-
4338.200	Ne I	-	-	[2]	Ps	4335.029	I	-	[10]	Ke	-	4331.396	Mo	12 d	15 d	-	-
4338.199	Ta	1	8	-	-	4335.027	Er	2	-	-	-	4331.381	Gd	15	8	-	-
4338.146	Ce	2	-	-	-	4334.964	La II	40	50	-	-	4331.376	Re	5	-	-	-
4338.139	Mn	12	-	-	-	4334.946	U	3	1 h	-	-	4331.374	Cb	10	10	-	-
4338.121	Th	3	1	-	-	4334.868	Ce	18	-	-	-	4331.368	Er	5	-	-	-
4338.12	I	-	-	[3]	Ke	4334.835	Ti I	30	5	-	-	4331.294	Pr	10	3	-	-
4337.919	Ti II	70	125	-	-	4334.811	Eu	25	25	-	-	4331.25	A	-	-	[200]	Rt
4337.89	Sr I	150	50	-	Fl	4334.752	Mo	2	2	-	-	4331.24	Kr II	-	-	[80 wh]	Me
4337.777	Ce I, II	25	10	-	-	4334.67	Tb	12	1 h	-	-	4331.235	Co	5 h	2	-	-
4337.777	La II	6	3 h	-	-	4334.658	Pt I	2	-	-	-	4331.181	Nd	2	-	-	Kn
4337.684	Eu	100 W	2	-	-	4334.638	Hf II	10	20	-	-	4331.176	Eu	80	-	-	-
4337.664	Sr I	30 h	-	-	ISn	4334.634	Ce	3	-	-	-	4331.165	Ru I	15	-	-	-
4337.64	Tb	25	2	-	-	4334.616	Pr	40	6 w	-	-	4331.14	Dy	2	-	-	Ed
4337.636	U	8	-	-	-	4334.61	Dy	5	-	Ed	-	4330.98	Tb	7	-	-	-
4337.623	Zr II	3 h	2	-	-	4334.538	Nd	5	1	-	-	4330.970	W	12	6	-	-
4337.60	Se II	-	-	[40]	Bl	4334.470	Mo	6	5	-	-	4330.959	Fe	5	-	-	-
4337.586	Ce	3	-	-	-	4334.469	U	2	3	-	-	4330.95	S	-	-	[3]	Hn
4337.566	Cr I	500	300	-	-	4334.331	Ce	2	-	-	-	4330.937	Ce	6	-	-	-
4337.561	Cb	10	30	-	Me	4334.227	Ce	3	-	-	-	4330.877	Nd	3	-	-	-
4337.515	Pr	4	-	-	-	4334.149	Sm II	200	200	-	-	4330.83	Tb	8	-	-	-
4337.510	Gd	50	50	-	-	4334.125	Ne I	-	[70]	IMe	-	4330.775	Yt I	6	-	-	-
4337.49	Dy	5	-	-	Ed	4334.092	V I	20	12	-	-	4330.720	Ni I	5	-	-	-
4337.49	I II	-	-	[2]	Mu	4333.942	Th	5	4	-	-	4330.708	U	3	1 h	-	-
4337.423	Mn	80	-	-	-	4333.913	Pr	150	100	Kn	-	4330.708	Ti II	15	30	-	-
4337.408	U	12	3	-	-	4333.84	S II	-	[3]	Hn	-	4330.660	W	12	6	-	-
4337.394	Th	10	10	-	-	4333.749	Eu	6 w	-	-	-	4330.64	Ho	2	-	-	Kn
4337.33	Ti II	-	2	-	-	4333.748	Er	9	-	-	-	4330.616	Gd	100	-	-	-
4337.30	Sb II	-	2	-	Dv	4333.734	La II	800	500	-	-	4330.611	Eu	20	4	-	-
4337.293	Ce	3	-	-	-	4333.72	Dy	2	-	Ed	-	4330.52	Xe II	-	-	[500 whl]	Hu
4337.283	Yt I	4	3	-	-	4333.71	Tb	4	-	-	-	4330.445	Ce II	50	5	-	-
4337.281	Th	3	-	-	-	4333.560	A I	-	[1000]	I	-	4330.440	Pr	50	3 w	-	-
4337.267	Cr	8	4	-	-	4333.524	U	5	4	-	-	4330.43	Br	-	-	[8]	Bl
4337.266	Ru	15	-	-	-	4333.412	Ce	4	-	-	-	4330.35	Tb	8	-	-	-
4337.232	Nd	10	-	-	-	4333.394	Nd	5	-	-	-	4330.320	Gd	5	-	-	-
4337.13	Ho	4	4	-	Kn	4333.34	Kr II	-	[50 wh]	Me	-	4330.29	W	4	1	-	-
4337.10	A II	-	-	[30]	Rt	4333.262	Zr II	8	5	-	-	4330.28	Se I, II	-	-	[200]	Rd
4337.07	Xe II	-	-	[15 whl]	Hu	4333.248	Gd	10	-	-	-	4330.273	Er	5	3	-	-
4337.049	Fe I	400	150	-	S	4333.217	Nd	3	-	-	-	4330.27	Hf	15	3	-	Me
4336.85	O II	-	-	[70]	Mh	4333.211	Mo	10	12	-	-	4330.243	Ti II	10	40	-	-
4336.85	As II	-	-	100	Ro	4333.148	Pr	40	10	-	-	4330.239	Ca II	-	-	[20]	Sv
4336.742	Sm	10	6	-	-	4333.00	I I	-	[15]	Db	-	4330.155	Fe	10	2	-	-
4336.708	Eu	8 w	-	-	-	4332.92	Dy	3	-	Ed	-	4330.088	Mo	10	8	-	-
4336.66	Hf II	30	60 h	-	-	4332.905	Ba I	20	3	-	-	4330.04	Sn	-	7	-	Ar
4336.515	U	2	2	-	-	4332.85	Eu	3 w	1	Kn	-	4330.024	V I	40	-	-	-
4336.51	A	-	-	[5]	Rt	4332.823	V I	60	40	-	-	4330.020	In II	-	-	[50]	Ps
4336.50	Tb	40	5	-	m	4332.80	Cl II	-	[9]	Ks	-	4330.013	Sm	80	15	-	-
4336.50	Gd	5	-	-	Kn	4332.744	Mo	6	5	-	-	4329.97	Eu	100 w	1	-	-
4336.48	N	-	-	[20]	Du	4332.72	Lu	10	1	Me	-	4329.938	Ce	6	-	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4329.92	Tb	3	-	-	-	4326.40	Yb	20 h	-	-	-	4323.279	Nd	20	15	-	-
4329.902	Ir	30	2	-	-	4326.39	Ho	2	1	-	Kn	4323.277	Sm II	125	100	-	-
4329.897	Yt	4	-	-	-	4326.39	Dy	2	-	-	Kn	4323.071	Pr	8	1	-	-
4329.89	Dy	4	2	-	Kn	4326.355	Ti I	60	25	-	-	4322.999	Ba	15	5	-	-
4329.732	Cb	5	10	-	-	4326.335	In II	-	[5]	-	Ps	4322.98	Kr II	-	[150 whl]	-	Me
4329.72	Yb	5	-	-	-	4326.327	Cb	30	5	-	-	4322.961	Ru	7	-	-	-
4329.649	In II	-	[2]	-	Ps	4326.315	Cs	-	[10]	-	Sv	4322.88	Tb	12	1	-	-
4329.629	Mo	15	-	-	-	4326.291	Gd	3	-	-	-	4322.789	Ce	8	-	-	-
4329.62	Ba II	-	[10]	-	Rs	4326.254	Os	30	12	-	-	4322.765	Pr	6	1	-	-
4329.584	Gd	100	100	-	-	4326.24	Hf	6 h	-	-	Me	4322.75	I II	-	[8]	-	Ke
4329.57	Ta	10	5	-	-	4326.229	In II	-	[15]	-	Ps	4322.749	W	12	3	-	-
4329.561	Zr I	5	-	-	-	4326.185	La I	5	-	-	-	4322.684	Ta	5	5	-	-
4329.56	Tb	2	-	-	Ed	4326.137	Mo	50	40	-	-	4322.66	Ne II	-	[5]	-	Bl
4329.500	Th	6	6	-	-	4326.13	Eu	4 w	-	-	Kn	4322.637	Er	7	-	-	-
4329.476	Cb	-	5	-	-	4326.127	Sm	2	-	-	-	4322.575	Eu	60	-	-	-
4329.44	Tb	4	-	-	-	4326.019	In II	-	[10]	-	Ps	4322.56	Yt	3	-	-	m
4329.420	Mn	15	-	-	-	4325.897	U	10	10	-	-	4322.55	Dy	5	2	-	Kn
4329.415	Pr	50	20	-	-	4325.885	In II	-	[10]	-	Ps	4322.538	Nd	5	1	-	-
4329.361	Eu	100 W	2	-	-	4325.88	C II	-	10	-	En	4322.503	La II	150	150	-	-
4329.335	Mo	10	10	-	-	4325.83	Tb	100	-	-	-	4322.471	Mo	8	10	-	-
4329.22	Ca	-	6 h	-	Ad	4325.823	Mo	25	20	-	Pu	4322.410	Pr	10 w	-	-	-
4329.079	Re	2	-	-	-	4325.77	Te	-	[30]	-	Bi	4322.397	U	8	3	-	-
4329.016	Sm II	300	300	-	-	4325.766	Nd	100	30	-	-	4322.353	V I	6	5	-	-
4328.99	Ho	3	-	-	Kn	4325.765	Fe I	1000	700	-	S	4322.283	Yt	3	2	-	-
4328.985	Pr	50	10	-	-	4325.76	O II	-	[20]	-	Mh	4322.26	Ne	-	[15]	-	Bl
4328.955	Tb	20	2 h	-	-	4325.757	In II	-	[5]	-	Ps	4322.24	Tb	30	2	-	-
4328.941	Gd	3	-	-	-	4325.73	Ba II	-	[50]	-	Rs	4322.23	Yb	6	20	-	-
4328.90	Dy	10	2	-	Kn	4325.7	Li II	-	[3]	-	Wr	4322.221	Zr I	3 h	-	-	-
4328.81	Er	7	1	-	m	4325.690	Gd I	500 R	250	-	-	4322.195	Gd	50	25	-	-
4328.742	U	20	1	-	-	4325.665	Ca	-	4	-	-	4322.19	Se	-	[60]	-	Bl
4328.72	Re	2	-	-	-	4325.607	Ni I	70	-	-	-	4322.116	Ce	4	-	-	-
4328.71	Bi	-	4 h	-	Om	4325.568	Gd	5	-	-	-	4322.071	U	3	2	-	-
4328.70	Se I	-	[200]	-	Rd	4325.53	Eu	30 w	-	-	Kn	4322.036	Pr	5	-	-	-
4328.695	Mo	3	5	-	-	4325.50	Tb	15	-	-	-	4322.020	V II	3	3	-	-
4328.693	Th	6	6	-	-	4325.435	Zr I	8	2	-	-	4322.008	Gd	6	-	-	-
4328.68	Cu I	2	-	-	-	4325.361	Ni I	10	-	-	-	4321.968	Mo	15	15	-	-
4328.677	Os	60	4	-	-	4325.358	Pr	20 d	2 h	-	-	4321.96	Te	-	[30]	-	Bl
4328.66	O II	-	[15]	-	Fl	4325.314	Ce	4	-	-	-	4321.868	Sm	3	2	-	-
4328.602	U	2	1	-	-	4325.28	Yb	-	10	-	Me	4321.829	Nd	4	4	-	-
4328.558	Ru I	6	-	-	-	4325.256	Mo	15	20	-	-	4321.82	Xe II	-	[20]	-	Hu
4328.430	Cb	10	20	-	-	4325.216	V	1	5	-	Me	4321.81	Si	-	2	-	Sy
4328.421	Pr	50	15	-	-	4325.17	W	2	3	-	-	4321.800	Fe	20	4	-	-
4328.417	W	4	1	-	-	4325.163	Ba	15	3	-	-	4321.781	Mo	12	12	-	-
4328.202	Pr	35	4 w	-	-	4325.148	Sm	3	2 h	-	-	4321.665	Ti I	70	25	-	-
4328.161	Nd	10	3	-	-	4325.14	Ho	-	2 h	-	Ex	4321.617	Cr	70	3	-	-
4328.144	U	2	3	-	-	4325.14	Dy	10	4	-	Kn	4321.54	Ca	3	1	-	Ad
4328.086	Pd I	2 h	-	-	-	4325.134	Ti I	100	40	-	-	4321.519	Ce	4	-	-	-
4328.08	Tb	4	1 h	-	-	4325.126	Ce	2	-	-	-	4321.50	Tb	8	-	-	-
4328.02	Mo	-	30	-	-	4325.075	Cr	125	130	-	-	4321.492	Cb	-	30	-	-
4327.98	Dy	4	2	-	Ed	4325.052	Ru I	25	10	-	-	4321.492	Ne I	-	[2]	-	Ps
4327.932	Nd	30	15	-	-	4325.010	Se II	50	40	-	-	4321.439	Zr I	3	-	-	-
4327.78	Tb	3	-	-	-	4324.802	Pr	3	-	-	-	4321.36	Hf II	4	10	-	Me
4327.78	Hf	4	12	-	Me	4324.789	Ce	18	3	-	-	4321.329	Pr	15	2	-	-
4327.762	Ce	3 l	-	-	-	4324.598	Ce	10	7	-	-	4321.301	Ru I	7	-	-	-
4327.698	Pr	3	-	-	-	4324.59	W	-	7	-	-	4321.255	Ce	8	-	-	-
4327.580	Cs II	-	[10]	-	Ot	4324.568	Gd	8	4	-	-	4321.238	Cr	70	2	-	-
4327.55	Hf II	-	4	-	Me	4324.555	U	6	4	-	-	4321.207	Eu	2 W	-	-	-
4327.512	Sm II	10	6	-	-	4324.542	Mo	5	4	-	-	4321.207	Gd	40	-	-	-
4327.511	Pr	8	-	-	-	4324.455	Sm	20	3	-	-	4321.167	Zr I	10	-	-	-
4327.50	Tb	5 w	-	-	-	4324.343	Re	10	-	-	-	4321.161	Mn	60	5	-	-
4327.47	O II	-	[20]	-	Mh	4324.318	Pr	3	-	-	-	4321.108	Gd	50	20	-	-
4327.429	Ru I	7	-	-	-	4324.3	bh Sr	3	-	-	L	4321.1	Na I	3	-	-	Fo
4327.413	W	12	7	-	-	4324.3	Na I	10	-	-	Fo	4320.958	Ti II	12	40	-	-
4327.381	Cb	10	10	-	-	4324.19	Ho	-	2	-	Ex	4320.84	Fe	3 h	1 h	-	-
4327.334	In II	-	[80]	-	Ps	4324.10	As II	-	50	-	Ro	4320.816	Ru I	5	-	-	-
4327.265	Ne I	-	[10]	-	Ps	4324.091	Ce	4 h	-	-	-	4320.754	Pr	20	2	-	-
4327.14	Th	15	7	-	-	4324.09	Tb	3	-	-	-	4320.745	Se II	50	40	-	-
4327.104	Gd	500 R	100	-	-	4324.074	Gd	100	-	-	-	4320.723	Ce II	50	8	-	-
4327.098	Fe	100	50	-	-	4324.030	Zr I	9	-	-	-	4320.672	Hf II	15	20	-	-
4327.065	Pt I	80	4	-	-	4323.922	Pr	35	3 w	-	-	4320.597	Th	8	5	-	-
4326.967	Ti I	12	1	-	-	4323.902	Nd	12	6	-	-	4320.592	Cr I	125	6	-	-
4326.927	U	3	6	-	-	4323.893	Zr I	3	-	-	-	4320.580	Ru	5	-	-	-
4326.826	Ce	15	-	-	-	4323.794	Dy	5	-	-	Kn	4320.527	Gd	60	20	-	-
4326.825	Ru I	20	-	-	-	4323.79	Te	-	[30]	-	Bl	4320.50	W	3	1 h	-	-
4326.809	In II	-	[5]	-	Ps	4323.757	U	8	10	-	-	4320.401	U	5	2	-	-
4326.761	In II	-	[15]	-	Ps	4323.66	Tb	25 d	2	-	-	4320.39	Se II	-	[100]	-	Bl
4326.760	Fe I	10	4	-	-	4323.612	Ba I	10	3	-	-	4320.387	Co I	2	1	-	-
4326.756	Mn	80	30	-	-	4323.609	Gd	5	-	-	-	4320.367	Pr	5	-	-	-
4326.743	Mo	50	50	-	-	4323.551	Pr	100	35	-	-	4320.28	Tb	12	-	-	-
4326.74	Ba II	-	[5]	-	Rs	4323.523	Cr	100	15	-	-	4320.273	V I	6	4	-	-
4326.595	U	2	2	-	-	4323.441	Ti I	20	2	-	-	4320.27	Sb II	-	3	-	Dv
4326.48	Tb	150	4	-	-	4323.426	Ir	5	-	-	-	4320.168	Pr	20	2 h	-	-
4326.445	Sr I	8	-	-	ISn	4323.401	Mn	50	-	-	-	4320.156	Eu	12	1	-	-
4326.44	Eu	8 w	-	-	-	4323.34	Cl I	-	[12]	-	Ks	4320.131	Th	12	10	-	-
4326.426	U	2	2	-	-	4323.319	U	2	1	-	-	4319.948	Nd	20	-	-	-

4319.9—4310.3 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4319.938	Er	12	-	4317.045	Pr	35	10 wh	4313.547	Mo	6	6
4319.894	Ir	30	-	4316.992	Cs II	-	[2] Ot	4313.50	C II	-	15
4319.869	Ru I	20	40	4316.969	Yb	20	40	4313.451	Eu	5	-
4319.782	U	8	8	4316.949	Rb	-	2 Rr	4313.43	Tb	8	-
4319.723	Pr	8	2 h	4316.896	Sb	-	2 Sp	4313.416	Er	2	-
4319.717	Fe II	1	1	4316.88	I	-	[8 h] Bl	4313.37	W	4	2
4319.682	Ce	6	3 wh	4316.84	P	-	[30] Gu	4313.355	Nd	20	10
4319.647	O II	-	[150] Fl	4316.813	W	15	7	4313.34	I II	-	[5] Mu
4319.641	Cr I	100	20	4316.801	Ti II	7	35	4313.316	Sm II	8	4
4319.5797	Kr I	-	[1000] S	4316.80	Tb	5	-	4313.314	Th	6	4
4319.54	Ca	2 h	2	4316.701	Sm	3	3	4313.3	bh Zr	8	-
4319.530	Re I	20	-	4316.638	Ru I	12	-	4313.260	Pr	15 w	-
4319.526	Sm	50	15	4316.518	Nd	5	-	4313.24	Tb	15	1 h
4319.520	U	5	4	4316.494	U	15	1 h	4313.22	Ti II	-	[2] El
4319.512	Mo	5 h	4 h	4316.481	Cb	5	15	4313.182	Sr I	3 h	-
4319.51	Hf II	2	10 wh	4316.420	Ce	6	-	4313.18	W	2	4
4319.339	Os	9	1	4316.41	Er	4	1 m	4313.148	Pr	2	-
4319.336	Nd	8	2	4316.366	Mo	4	4	4313.147	U	20	1 h
4319.321	Cr	15	-	4316.304	Ir	12	-	4313.11	N	-	[15] Mt
4319.26	Te	-	[50] Bl	4316.296	Yt I	3	-	4313.103	Ce II	12	1
4319.13	Ca	-	3	4316.275	Gd	40	-	4313.1	Hg I	-	[5] Cn
4319.125	Ru I	6	-	4316.21	Se II	-	[40] Bt	4312.997	Th	8	4
4319.12	Sr I	50	20	4316.176	Re	5	-	4312.967	Mo	10	10
4319.12	Kr II	-	[4] Me	4316.091	Nd	10	3	4312.870	Ti II	35	100
4319.108	Th	5	4	4316.061	Gd	150	60	4312.859	Ce	6	-
4319.087	Ce	8	-	4316.057	Pr	50	8	4312.846	Sm	20	8
4319.056	U	1	5	4316.036	U	4	2	4312.798	Mo	15	6
4319.053	Sr I	25 h	-	4316.008	Ne I	-	[15] Ps	4312.778	Cs	-	[10] Sv
4319.048	Zr I	10	-	4316.008	Ce	5	-	4312.74	Sr II	7	3
4319.003	Pr	25	8	4315.957	Th	5	4	4312.629	U	6	4
4318.985	Dy	3	-	4315.902	La II	50	3 h	4312.560	Ce	10	-
4318.935	Sm II	300	300	4315.887	U	3	2 h	4312.550	Mn	100	20
4318.92	C II	-	10	4315.86	As II	-	50 Ro	4312.477	Ru	6	-
4318.91	Se II	-	[8] Bl	4315.799	Mo	5	6	4312.469	Cr	30	1
4318.85	Tb	150	30	4315.772	Er	4	-	4312.453	Cb	5	5
4318.834	Ne I	-	[5] Ps	4315.75	Tb	12	1 h	4312.452	Mo	-	15
4318.809	Ta	15	5	4315.745	Sm	3	3	4312.429	Dy	2	-
4318.70	V	5	2	4315.71	Re I	40 w	-	4312.4	-	-	[20] Kn
4318.68	S II	-	[40] Hg	4315.686	Ce	10	-	4312.37	Ti II	-	[5] El
4318.652	Ca I	60	20	4315.66	I	-	[8 h] Bl	4312.367	Yb	7	-
4318.643	Ir	8	-	4315.523	Pr	30	8	4312.355	Pr	8	1
4318.639	Ti I	100	50	4315.463	Yt	6	2 h	4312.348	W	10	3
4318.636	Ce	12	1	4315.406	Ce II	6	2	4312.344	U	-	2 h
4318.61	Se	-	[10] Bl	4315.386	Mo	6	4	4312.10	Tb	12	2
4318.577	Re	20	-	4315.355	Sm II	5	5	4312.075	Nd	5	1
4318.573	W	9	3	4315.25	Mo	-	10	4311.93	Dy	4	-
4318.5525	Kr I	-	[400] S	4315.17	Au II	8	10 h	4311.919	Pr	10	2
4318.550	Mo	5	6	4315.09	Au I	40	18	4311.799	Th	6	1
4318.49	Tb	8	-	4315.087	Fe I	500	300	4311.743	La I	15	5 h
4318.440	Pr	3	1	4315.07	Eu	8 w	-	4311.700	Cb	3	3
4318.433	Ru I	15	-	4315.02	Ho	-	2 h	4311.653	Mo	2	40
4318.39	Th	3	-	4314.985	Pd I	3	-	4311.653	Ti I	25	7
4318.300	Th	6	5	4314.978	Ti II	6	20	4311.590	Ce	25	3
4318.251	Mo	5	4	4314.934	Ce II	6	-	4311.57	Tb	10	1 h
4318.139	Hf	12	6	4314.832	V	8	3	4311.54	Pr	15	1
4318.049	Ce	3	-	4314.801	Ti I	100	20	4311.498	Ir	300	10
4318.024	U	-	3	4314.695	Ne I	-	[30] Ps	4311.399	Os	150	9
4318.006	Cb	3	5	4314.691	Pr	10	1	4311.391	Cb	5	5
4317.985	Ce	12 l	-	4314.582	Re	20	-	4311.305	Eu	4 W	1
4317.947	Re	2 h	-	4314.517	Ta	30	5 h	4311.30	Tb	4	-
4317.93	Tb	3	-	4314.511	Nd	20	12	4311.265	Cb	30	100
4317.93	Dy	2	-	4314.480	Ce	10	1	4311.254	Nd	15	1
4317.929	Mo	30	25	4314.403	Gd	100	20	4311.102	Pr	50	10 w
4317.85	K II	-	[5] Bn	4314.369	Nd	15	10	4311.10	W	8	3
4317.836	Pr	40	5 w	4314.356	Pr	25	3	4311.074	Ag	5	25 l
4317.81	Kr II	-	[500 whl] Me	4314.348	Ti I	30	7	4311.04	Ho	2	1
4317.714	Cb	-	20	4314.32	Si	-	3	4311.038	Ce	2	-
4317.70	N	-	[20] Du	4314.32	Sb II	-	[3] Lg	4311.028	Eu	10	2
4317.668	Eu	20	-	4314.302	Ru	20	-	4311.023	Mo	1	30
4317.667	Re	2 h	-	4314.297	Eu	4 w	-	4310.988	Gd	100	-
4317.589	U	4	3	4314.289	Fe II	3	3	4310.98	Tb	12	1
4317.42	C II	-	30	4314.14	Tb	3	-	4310.699	Ce II	30 s	3
4317.4	Eu	10 w	-	4314.084	Sc II	50	150	4310.68	Tb	3	-
4317.36	Tb	4 h	-	4313.972	Zr	10 r	-	4310.591	Ir	150	8
4317.333	Ce	25 s	1	4313.892	V I	10	8	4310.59	I	-	[8] Ke
4317.313	Zr II	10	4	4313.886	Dy	12	4	4310.585	Eu	7	2
4317.3	F II	-	[6] Di	4313.884	U	15	10	4310.51	Xe II	-	[200 h] Hu
4317.265	Mo	5 d	5 d	4313.877	Cb	2	10	4310.506	Nd	20	6
4317.249	Nd	4 d	-	4313.871	Sm	40	10	4310.47	A	-	[20] Ms
4317.244	U	1	3	4313.851	Gd	200	80	4310.45	Tb	20	1
4317.160	O II	-	[150] Fl	4313.851	Eu	10	2	4310.44	Re	5	-
4317.117	Re	6 w	-	4313.715	Sm II	15	10	4310.435	Er	2	-
4317.109	Ce	8	3 h	4313.69	Tb	3	-	4310.390	Mo	15	12
4317.1	bh Pb	4	-	4313.689	Er	2	-	4310.388	Ce	10	-
4317.080	U	12	1	4313.594	Ce	10	-	4310.386	U	8	8

Wave-length	Element	Intensity Arc Spk., [Dis.]	R	Wave-length	Element	Intensity Arc Spk., [Dis.]	R	Wave-length	Element	Intensity Arc Spk., [Dis.]	R
4310.366	Ti I	10	1	4306.945	Ti I	10	1	4303.813	Er	12	-
4310.3	Bi II	-	[8]	4306.875	W	20	15	4303.78	O II	-	[60 h] Mh
4310.259	W	12	3	4306.861	Eu	2w	-	4303.60	Dy	3	-
4310.203	Pr	4	-	4306.82	Cd I	8	3	4303.596	Hf	10	6
4310.19	Eu	4w	-	4306.808	Pr	4	-	4303.594	Pr	100	60
4310.130	Ne I	-	[2]	4306.80	Ti II	-	[40]	4303.573	Nd	100	40
4310.074	Co I	2	-	4306.80	Ta	1	5h	4303.54	Ta	1	15
4309.994	Th	15	12	4306.782	U	40r	4	4303.533	W	4	-
4309.877	W	8	2	4306.77	Dy	2	-	4303.527	V	15	7
4309.873	Pr	5	-	4306.743	Nd	15	10	4303.456	Gd	6	6
4309.82	Yb	10	-	4306.724	Ce	30	15	4303.328	W	-	15
4309.818	Zr I	8	-	4306.646	Mo	4	5	4303.325	U	6	6
4309.795	V I	30	20	4306.54	Cs	-	[10]	4303.248	Ne I	-	[30] Ps
4309.767	Ir	3	-	4306.535	Pr	5	1	4303.236	Co I	15	2
4309.739	Ce II	25	4	4306.523	U	5	5	4303.168	Fe II	12	15
4309.712	Cr	12	-	4306.49	Yb	-	3	4303.139	Pr	20	5
4309.697	U	12	3	4306.381	Th	8	6	4303.03	Dy	8	-
4309.627	Yt II	50	-	4306.350	Gd	200	80	4302.979	Ti I	10	-
4309.583	Ce	8	-	4306.343	Er	6	-	4302.978	Ta	125W	40W
4309.57	Lu	25	2	4306.33	W	4	2	4302.94	Tb	10d	-
4309.561	Cb	3	10	4306.299	Rb II	-	10h	4302.906	Cb	2	10h
4309.560	Nd	5	2	4306.284	Cb	3	5	4302.886	Zr I	100	1
4309.526	V I	7	4	4306.244	Ne I	-	[70]	4302.774	Cr	40	2
4309.50	Re	10	-	4306.22	Dy	3	-	4302.72	Dy	10	-
4309.43	Co I	2	-	4306.214	V I	30	20	4302.7	bh Sr	4	-
4309.380	Fe I	125	70	4306.147	Sm	2h	2h	4302.653	Ce	10	-
4309.32	Ba II	-	[80]	4306.083	Pr	25	15	4302.57	Dy	2	-
4309.294	Gd	20	10	4306.002	La I	30	-	4302.530	U	2	-
4309.25	A II	-	[5]	4305.967	Yb	15	3	4302.527	Ca I	50	25
4309.208	Ru	12	-	4305.948	Ir	25	2	4302.446	Kr	-	[10] IWg IHu
4309.175	U	10	1	4305.916	Ti I	300	150	4302.43	Pt	-	2
4309.172	Pt	3	-	4305.812	Nd	5	2	4302.294	Yt I	30	8
4309.11	A II	-	[2]	4305.81	Kr	-	[3h]	4302.26	As	-	5
4309.108	Zr	3	-	4305.763	Pr	150	90	4302.192	Fe I	50	10
4309.097	Ti I	10	1	4305.715	Sc II	20	20	4302.149	V I	8	7
4309.09	Se II	-	[25]	4305.660	Mn	50	-	4302.136	Bi II	2h	50wh
4309.076	K II	-	[40]	4305.628	W	10	4	4302.108	W I	60	60
4309.06	Cl II	-	[50]	4305.609	Ce II	4	-	4302.10	Pr	60	5w
4309.039	Fe	40	20	4305.595	Pr	3	1	4302.089	U	5	4
4309.004	Sm II	200	150	4305.49	Yb	5	-	4301.934	Ti II	25	50
4309.00	Pr	8	2	4305.482	Ti I	10	5	4301.932	Mo	10	10
4308.955	W	10	4	4305.478	V I	25	20	4301.723	U	6	2
4308.888	Pr	25	5	4305.467	Nd	4	2	4301.62	Ho	3	1
4308.877	Os	18	2	4305.46	N	-	[30]	4301.604	Er	25	2
4308.831	Rh I	4	2	4305.455	Fe I	100	50	4301.603	Ir	200	10
4308.78	Re	4	-	4305.453	Cr I	150	20	4301.592	Zr I	4	-
4308.738	Co	2	-	4305.447	Sr I	40	-	4301.583	Pr	20	30
4308.691	Cb	5	10	4305.415	Ce	4	-	4301.56	Eu	5	1
4308.68	Tb	10	2	4305.4	Bi II	-	[5]	4301.54	Ca	-	5
4308.651	Mo	6	6	4305.322	Re	30	-	4301.54	Tb	2h	-
4308.65	Ho	4	2	4305.265	K II	-	[2]	4301.533	Ce	10	-
4308.630	Er	30	3	4305.198	Ir	15	-	4301.53	Kr II	-	[40] Me
4308.623	Dy	100	12	4305.184	U	2h	3h	4301.470	U	15	15
4308.525	Bi I	4	1	4305.141	Ce	20	5	4301.277	Sm	7	1
4308.504	Ti I	20	2	4305.00	Ra I	-	[10]	4301.264	Mo	20	20
4308.50	W	8	4	4304.944	Sm II	100	100	4301.260	Er	4	-
4308.344	Dy	7	-	4304.94	W	3	-	4301.252	Nd	15	8
4308.260	Th	3	2	4304.937	K II	-	[40]	4301.210	Cb	1	2
4308.210	Gd	10	-	4304.916	Mo	15	15	4301.18	Tb	5	-
4308.182	Ir	3	-	4304.897	Gd	100	100	4301.178	Cr	100	25
4308.177	Bi I	50	12	4304.784	Re	5	-	4301.170	V II	-	10
4308.120	Cb	5	10	4304.721	Ce II	10	2h	4301.147	Ru	5	-
4308.105	Sr I	20h	-	4304.687	Cb	3	5	4301.09	Ho	2	2h
4307.95	Se II	-	[12]	4304.680	Zr I	15	-	4301.088	Ti I	150	50
4307.942	Cs II	-	[8]	4304.651	Pr	4	1	4301.053	Re	3	-
4307.906	Fe I	1000R	800R	4304.58	Dy	3	-	4301.031	Co I	3	-
4307.905	Ti II	100	100	4304.551	Mo	4	5	4300.993	Cb	30	30
4307.80	Br	-	[10]	4304.471	U	8	6	4300.97	Ca	-	5
4307.799	Ir	8	-	4304.444	Nd	20	12	4300.96	Yb	15	1
4307.778	Nd	5	6	4304.411	Re I	5w	-	4300.95	Tb	4	-
4307.76	Rn I	-	[400]	4304.407	Hf	6	2	4300.902	Nd	10	4
4307.741	Ca I	45	20	4304.28	Tb	4	-	4300.862	Ce	15	-
4307.673	Pr	30	10	4304.278	Ce	15	2h	4300.838	Eu	10	2
4307.645	W	12	12	4304.15	Si	-	2	4300.81	Zn	-	[25] Vs
4307.590	Ru I	20	50	4304.137	U	15r	1	4300.799	Th	5	4
4307.486	Cr	35	1	4304.13	Se II	-	[10]	4300.785	U	3	2
4307.422	Co I	3	-	4304.117	La II	3	2	4300.76	Dy	5	-
4307.42	Cl II	-	[75]	4304.07	Cl II	-	[40]	4300.66	A II	-	[30] Kn Rt
4307.316	U	3	3	4304.02	Tb	12	10	4300.641	Ir	10	2
4307.286	Ni I	4	-	4304.020	Mo	12	10	4300.636	Cs II	-	[30] Sv
4307.24	Pr	30	2w	4304.0	C	-	[10]	4300.618	La I	5	-
4307.20	Tb	12	1h	4303.961	Ti	8	-	4300.565	Ti I	125	20
4307.185	Th	5	3	4303.955	Ne I	-	[5]	4300.511	Cr	100	20
4307.184	V I	30	20	4303.891	Mo	-	10	4300.49	Tb	2	-
4307.165	Al II	-	[20]	4303.881	Cb	3	10	4300.4877	Kr I, II	-	[200] S

4300.4—4290.5 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4300.435	La II	25	20	-	4296.750	Sm	100	50	-	4293.735	Sm	3	1	-
4300.335	Yt	3	2 h	-	4296.742	Zr II	3	2	-	4293.61	Sm II	-	[2]	Mo
4300.331	Ce II	40	15	-	4296.71	Pb II	-	[6]	Gs	4293.582	Pr	20	8	-
4300.300	U	10	-	-	4296.689	Ru	7	-	-	4293.565	Cr I	50	8	-
4300.25	Dy	2	-	Ed	4296.680	Ce	40	25	-	4293.484	Rb II	-	2	Rr
4300.197	Mn	60	5	-	4296.631	Cr	15	-	-	4293.35	Te	-	[70]	Bl
4300.100	A I	-	[1200]	I	4296.624	Mo	15	15	-	4293.305	U	18	5	-
4300.049	Ti II	40	100	-	4296.585	Fe II	2	2	-	4293.284	Ru I	15	-	-
4300.003	U	8	8	-	4296.55	Pr	15	2 w	-	4293.216	Nd	3 d	-	-
4299.923	Re	15	-	-	4296.41	Hf	10	6	m	4293.210	Mo	125	100	-
4299.92	Tb	15	-	-	4296.40	Xe II	-	[200 h]	Hu	4293.14	Tb	12	-	-
4299.873	U	4	4	-	4296.371	Ce	10	-	-	4293.135	Pr	25	8	-
4299.846	Th	8	4	-	4296.363	Nd	12	3	-	4293.131	Ce	10	-	-
4299.718	Cr I	100	50	-	4296.35	I	-	[5]	Ke	4293.128	Zr II	5	2	-
4299.696	Nd	15	5	-	4296.35	Tb	20	2 h	-	4292.991	Eu	10 W	-	-
4299.639	Ti I	60	10	-	4296.34	Dy	2	-	Kn	4292.99	Zn II	-	[2]	Vs
4299.599	Cb	20	30	-	4296.291	Gd	40	40	-	4292.96	Tm	3	5	-
4299.51	As II	-	10	Ro	4296.275	Cr	15	-	-	4292.94	Dy	5	-	Ed
4299.398	U	3	3	-	4296.218	Os	12	1	-	4292.92	Kr II	-	[600]	Me
4299.361	Ce II	15	2	-	4296.18	Pr	10	1	-	4292.895	Nd	6	1	-
4299.338	Sm II	15	10	-	4296.160	Mo	15	15	-	4292.885	Zn I	25	25	IHz
4299.301	Gd	20	-	Kn	4296.158	Cb	10	30	-	4292.767	Ce II	10	2	-
4299.241	Fe I	500	400	-	4296.114	Lu	6	1	Kn	4292.749	Gd	5	4	-
4299.24	A	-	[5]	Ms	4296.11	C II	-	6	En	4292.735	W	4	2	-
4299.229	Ti I	70	20	-	4296.107	V I	30	25	-	4292.676	Ti I	12	1	-
4299.177	F II	-	[150]	Di	4296.079	Gd	200	4	-	4292.65	Tb	9	1 h	-
4299.15	Tb	2	-	-	4296.069	Ce II	15	2	-	4292.64	Kr I	-	[6]	Me
4299.140	Sm	2	-	-	4296.048	La II	200	200	-	4292.581	Ce	10	2	-
4299.092	Ce II	5	-	-	4295.950	Lu	30	3	Kn	4292.479	Cb	30	50	-
4299.015	Nd	10	4	-	4295.928	Ru I	20	20	-	4292.469	Cu II	-	6	Sh
4298.986	Ca I	30	18	IWg	4295.888	Ni I	100	2 h	-	4292.424	Eu	4 W	-	-
4298.920	Pr	30	30	-	4295.757	Cr I	125	40	-	4292.290	Fe I	15	-	-
4298.913	Er	10	-	-	4295.756	Ti I	100	40	-	4292.239	Co	3 h	-	-
4298.9	Rb	-	[6]	Dr	4295.716	Sm II	15	5	-	4292.182	Sm II	100	60	-
4298.90	Dy	4	-	Kn	4295.689	W	-	3	-	4292.17	Er	7	1	-
4298.897	Mo	20	10	-	4295.631	Ca	2 h	2	-	4292.16	W	4	3	-
4298.831	Th	8	8	-	4295.618	Cb	3	5	-	4292.132	Mo	100	80	-
4298.767	Ni I	3	-	-	4295.58	Dy	8	2	Ed	4292.11	Tb	3	-	-
4298.724	Eu	20 W	2	-	4295.446	Sm	2	3	-	4292.05	Se	-	[10]	Bt
4298.665	Ti I	125	50	I	4295.441	Eu	20	5	-	4292.035	Cb	15	20	-
4298.515	Ni I	5	-	-	4295.368	Mo	5	-	-	4292.008	Cs	-	[12]	Sv
4298.465	Nd	5	2	-	4295.35	Tb	10	-	-	4291.976	Ne I	-	[2]	Ps
4298.44	Dy	2	-	Ed	4295.346	U	10	10	-	4291.964	Cr	35	20	-
4298.424	Gd	25	1	-	4295.226	Nd	10	2	-	4291.95	I	-	[20]	Ke
4298.42	Sm	3	3	-	4295.21	Kr	-	[8 hl]	Me	4291.93	Dy	25	-	Kn
4298.410	W	6	3	-	4295.150	Zr	4	-	-	4291.864	Ti I	5 h	-	-
4298.38	Tb	12	1	-	4295.11	Pr	12	5	-	4291.816	V I	40	30 r	-
4298.37	Tm	20	2	Me	4295.103	U	15	1	-	4291.80	Re	3	-	-
4298.327	Zn I	25	25	IHz	4295.088	Th	4	1	-	4291.76	Cl II	-	[50]	Ks
4298.217	Re	3 h	-	-	4295.039	Er	15	-	-	4291.72	Ti II	-	[2]	El
4298.160	Ce	2	-	-	4295.038	Dy	20	-	Kn	4291.671	Mo	3	2	-
4298.07	Eu	6 w	-	Kn	4295.01	Ho	3	-	Ex	4291.652	U	5	1	-
4298.040	Fe I	100	400	S	4295.008	Sb	-	2 h	Sp	4291.646	Re I	25	-	-
4298.029	V I	25	20	-	4295.005	W	5	4	-	4291.63	Pr	18	2	-
4297.99	A II	-	[20]	Rt	4294.97	A	-	[20]	Ms	4291.610	Sm	8	8	-
4297.934	Co I	2	2 h	-	4294.936	Dy	25	15	Kn	4291.469	Nd	5	-	-
4297.86	Eu	2 w	-	-	4294.792	Zr I	40	1	-	4291.466	Fe I	125	20	-
4297.811	Ce	2	-	-	4294.791	Ru I	20	-	-	4291.45	S II	-	[5]	Hn
4297.764	Pr	50	40	-	4294.787	Hf	25	2	-	4291.40	Tb	3	-	-
4297.738	Cr	125	30	-	4294.767	So II	20	20	-	4291.40	Br	-	[150]	Bl
4297.711	Ru I	60	50	-	4294.756	Ce II	10	-	-	4291.36	Tm	5	5	Me
4297.681	V I	20	15	-	4294.74	O II	-	[30 h]	Mh	4291.349	Zr I	6	-	-
4297.638	Mo	6	5	-	4294.735	Nd	15	2	-	4291.299	V I	15	10	-
4297.604	U	5	5	-	4294.700	Pr	25	10	-	4291.210	Ti I	3	1	-
4297.60	Ba II	-	[5]	Rs	4294.67	Eu	4	2	-	4291.204	Zr I	6	-	-
4297.514	Cs	-	[10]	Sv	4294.651	U	3 h	1	-	4291.202	Mo	15	15	-
4297.43	As II	-	10	Ro	4294.65	Sn I	-	[3]	Mc	4291.192	Cb	10	15	-
4297.428	Eu	10 W	-	-	4294.614	W I	50	50	-	4291.19	O II	-	[15 h]	Mh
4297.351	Nd	12	4	-	4294.599	Mo	6	6	-	4291.183	Re	100 w	-	-
4297.349	Th	10	4	-	4294.567	Rb II	-	2	Rr	4291.165	Ba	10	3	Sz
4297.31	Se II	-	[40]	Bl	4294.432	S II	-	[80]	Hn	4291.138	Ti	10	4	-
4297.30	Er	2	-	Ed	4294.362	Rb II	-	3	Rr	4291.034	Yt I	4	2	-
4297.26	Gd	2 h	1	Ad	4294.36	Tb	10	-	1 h	4291.019	La I	4	-	-
4297.179	Gd	100	4	-	4294.25	Fe	-	[70]	Bl	4290.99	Pr	5	1	-
4297.12	Br	-	[15]	Bl	4294.128	Fe I	700	400	S	4290.957	Nd	15	8	-
4297.112	U	18	18	-	4294.124	Ti II	60	80	-	4290.937	Ti I	70	30	-
4297.050	Cr I	100	15	-	4294.11	P II	-	[15]	Gu	4290.887	Pt	2	1	-
4297.030	Ir	3	-	-	4294.099	W	20	10	-	4290.885	U	15	15	-
4296.984	Ni I	2	-	-	4294.05	Tb	5	-	-	4290.868	Fe I	20	2	-
4296.90	Gd	4	-	Kn	4293.994	Rb II	-	40	Rr	4290.78	Kr	-	[4]	Me
4296.82	Sr	3	2	Sd	4293.949	Os I	60	6	-	4290.6	Na I	3	-	Fo
4296.786	Ce	5	-	-	4293.880	Mo	20	20	-	4290.593	Ce	4	-	-
4296.770	Rh I	40	20	-	4293.87	Eu	6 w	-	-	4290.57	Se II	-	[20]	Bt
4296.752	Er	10 d	-	-	4293.84	Pb II	-	[7]	Gs	4290.529	Ru I	6	-	-
4296.75	Xe I	-	[5]	Hu	4293.753	Mo	10	4	-	4290.512	Pr	4	-	Kn

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4290.44	Dy	5	-	-	Kn	4287.057	Sb	-	2 h	Sp		4283.807	W	10	5	-	
4290.431	Ce II	2	-	-		4287.046	Ru	15	-	-		4283.78	Pr	25 w	1	-	
4290.40	Ne II	-	[100]	-	Bl	4287.002	Ce	8	-	-		4283.74	Tm	6 d	-	-	
4290.381	Fe	35	5	-	-	4286.992	Fe I	10	1	-	-	4283.722	Sb	5	-	-	Kn
4290.35	Cb	-	-	2 h	-	4286.990	Cb	15	30	-	-	4283.70	S	-	[3]	-	Hn
4290.295	Ce	2	-	-	-	4286.98	Pr	3	1	-	-	4283.562	Sc	4	-	-	-
4290.227	Ti II	35	60	-	-	4286.973	La II	400	300	-	-	4283.550	Ce II	5 h	-	-	-
4290.208	Zr I	40	20	-	-	4286.972	Zr I	5	-	-	-	4283.525	Th	10	10	-	-
4290.184	Mo	30 h	25 h	-	-	4286.922	Ce	8 wh	-	-	-	4283.496	Sm	30	6	-	-
4290.17	Ho	2	2	-	Kn	4286.90	Tb	20	2	-	-	4283.47	Hf	5	-	-	-
4290.144	W	8	3	-	-	4286.89	Dy	2	-	Ed		4283.45	Cl I	-	[6]	-	Mj
4290.12	Ca	-	5 h	-	Ad	4286.889	Fe	2	1	-	-	4283.395	Ir	3	-	-	-
4290.112	Mn	8	-	-	-	4286.841	Sm II	100	60	-	-	4283.316	Ce	8	-	-	-
4290.067	Gd	6	-	-	-	4286.619	Ir	200	3	-	-	4283.284	Mo	2	4	-	-
4289.938	Ce	50	25	-	-	4286.560	Er	20	-	-	-	4283.242	Ne I	-	[10]	-	Ps
4289.919	Ti I	15	2	-	-	4286.547	Sc	4	3	-	-	4283.109	Ba	25	20	-	-
4289.901	Gd	40	100	-	-	4286.54	Ho	3	1	-	Ex	4283.042	Nd	15	2	-	-
4289.89	Pr	15	4	-	-	4286.51	Ti II	-	[12 d]	El		4283.038	U	2	2	-	-
4289.882	U	12	12	-	-	4286.4873	Kr I	-	[40]	S		4283.02	Dy	2	-	-	Ed
4289.799	Ne I	-	[2]	-	Ps	4286.472	Re	12	-	-	-	4283.012	Yb	20	-	-	-
4289.73	Tb	30	-	-	-	4286.437	Fe I	3	1	-	-	4283.01	Pr	5	1	-	-
4289.721	Cr I	3000 R	800 r	-	-	4286.420	V I	20	15	-	-	4283.010	Ca I	40	20	-	IWg
4289.65	Se	-	[10]	-	Bl	4286.38	Pr	5 d	-	-	-	4282.988	Cr	12	1	-	-
4289.556	U	4	3	-	-	4286.376	Ta	80	20 h	-	-	4282.97	Al II	-	[2]	-	Sy
4289.454	Ce II	25	4	-	-	4286.215	Cb	5	5	-	-	4282.9683	Kr I	-	[100]	-	S
4289.444	Cb	10	20	-	-	4286.214	W	6	2	-	-	4282.911	V I	20	15	-	-
4289.42	Pr	12	3	-	-	4286.191	8	6	-	-	-	4282.90	A	-	[40]	-	Rt
4289.415	Mo	20	15	-	-	4286.124	V II	3	2	-	-	4282.827	Sm	20	8	-	-
4289.365	Sm	15	2	-	-	4286.122	Gd	60	20	-	-	4282.82	O II	-	[10 h]	-	Mh
4289.364	Ca I	35	20	-	IWg	4286.12	Tb	10	1 h	-	-	4282.813	Ce	3	-	-	-
4289.363	Nd	15	3 h	-	-	4286.090	Re	5	-	-	-	4282.8	Rb	-	[8]	-	Dr
4289.35	Dy	2	-	-	Ed	4286.013	W	15	8	-	-	4282.792	Gd	15	15	-	-
4289.30	Sb II	-	[6]	-	Lg	4286.009	Ti I	100	40	-	-	4282.740	Re I	15	-	-	-
4289.291	W	1	5	-	-	4285.96	C II	-	5	En		4282.711	Ti I	70	25	-	-
4289.09	A	-	[5]	-	Ma	4285.895	Os	30	3	-	-	4282.63	S II	-	[30]	-	Hn
4289.073	Ti I	125	50	-	-	4285.85	Pr	5	-	-	-	4282.6	Eu	6	-	-	Kn
4289.01	La I	4	-	-	Rl	4285.842	Ce	2	-	-	-	4282.6	Hg	-	[10]	-	Ps
4288.965	Fe I	5	1	-	-	4285.84	Te	-	[70]	Bl		4282.59	Cs	-	[10]	-	Bs
4288.841	U	20	2	-	-	4285.827	Gd	60	20	-	-	4282.570	Nd	10	8	-	-
4288.809	V II	3	2	-	-	4285.787	Co I	125	-	-	-	4282.45	U	5	5	-	m
4288.706	Rh I	400	100	-	-	4285.745	U	-	6	-	-	4282.443	Nd	15	-	-	-
4288.677	Th	5	1	-	-	4285.74	Tb	9	1 h	-	-	4282.44	Mo	4	3	-	-
4288.666	Ce II	30	-	-	-	4285.717	Eu	31	-	-	-	4282.440	Pr	75	40	-	-
4288.651	K II	-	[15]	-	Dm	4285.62	O II	-	[20 h]	Mh		4282.406	Fe I	600	300	-	S
4288.637	Mo	80	100	-	-	4285.598	Mo	4	4	-	-	4282.200	Sm	15	8	-	-
4288.605	Eu	10	1	-	-	4285.59	Er	3	1	-	-	4282.200	Zr II	30	4	-	-
4288.541	Ne I	-	[5]	-	Ps	4285.540	Pr	5	2	-	-	4282.10	Se II	-	[100]	-	Bt
4288.52	P II	-	[50]	-	Gu	4285.479	Sm II	200	200	-	-	4282.044	Th	30	25	-	-
4288.51	Te	-	[50]	-	Bl	4285.445	Fe	125	50	S		4282.028	U	30	30	-	-
4288.492	Ir	2	-	-	-	4285.41	Tb	3	-	-	-	4282.026	Zr I	8	-	-	-
4288.46	Pr	10	2 w	-	-	4285.40	Kr	-	[4 h]	Mo		4281.94	Hg	-	[20]	-	Ps
4288.428	Pt II	-	2	-	-	4285.366	Ce	25	8	-	-	4281.930	Ru	7	-	-	-
4288.422	U	2	2	-	-	4285.239	Cu II	2	4	Sh		4281.922	Eu	25	2	-	-
4288.381	Cr	15	3	-	-	4285.238	Zr I	4	-	-	-	4281.917	Ce II	5	-	-	-
4288.35	W	3	1	-	-	4285.232	U	10	1	-	-	4281.902	Pd I	3 h	-	-	-
4288.350	Cs II	-	[35]	-	Sv	4285.192	Th	5	5	-	-	4281.86	I II	-	[5]	-	Ke
4288.247	Mo	4	4	-	-	4285.13	Tb	25	3	-	-	4281.826	Mo	15	10	-	-
4288.162	Ti I	20	4	-	-	4285.070	Cd II	-	8	Vs		4281.82	Pr	18	2	-	-
4288.154	Fe I	50	6	-	-	4284.994	Ti I	40	20	-	-	4281.425	Th	15	10	-	-
4288.058	Pt I	75	1 h	-	-	4284.984	Th	8	8	-	-	4281.39	N	-	[5]	-	Du
4288.056	Th	8	6	-	-	4284.948	Gd	4	-	-	-	4281.376	Ti I	80	20	-	-
4288.02	Tb	3	-	-	-	4284.92	N	-	[5]	Du		4281.357	U	1	2	-	-
4288.02	Kr I	-	[5]	-	Ma	4284.904	Cr I	15	10	-	-	4281.342	Nd	5	1	-	-
4288.01	Dy	2	-	-	Kn	4284.853	K II	-	[10]	Dm		4281.34	Er	2	1	-	m
4288.005	Rb II	-	20	-	Rr	4284.838	U	-	2	-	-	4281.31	Cs	-	[10]	-	Bs
4288.005	Ni I	150	-	-	-	4284.725	Cr I	40	8	-	-	4281.30	Th	5	-	-	-
4287.98	I II	-	[5]	-	Mu	4284.719	Zr	4	-	-	-	4281.20	W	6	4	-	-
4287.899	Ir	12	2	-	-	4284.683	Ni I	25	10	-	-	4281.173	Mo	5	30	-	-
4287.881	Ti II	10	30	-	-	4284.652	Eu	2 w	-	-	-	4281.158	Ce II	15	-	-	-
4287.869	U	15	18	-	-	4284.6	Hg	-	[10]	Ps		4281.099	Mn	100	50	-	-
4287.809	V I	15	9	-	-	4284.597	Mo	125 h	80 h	-	-	4281.09	Eu	2	-	-	-
4287.8	Eu	5	-	-	Kn	4284.54	Ho	2	2	Kn		4281.072	Th	20	10	-	-
4287.8	bh Zr	4	-	-	L	4284.520	U	2 h	2 h	-	-	4281.05	Pr	8	1	-	-
4287.795	Ba II	-	[10]	-	-	4284.518	Nd	25	20	-	-	4281.03	Lu	40	4	-	Me
4287.75	Mn	5 h	-	-	-	4284.497	Sm	12	8	-	-	4281.002	Sm	50	30	-	-
4287.5	Na I	3	-	-	Fo	4284.48	Pr	10	-	-	-	4281.0	bh Sr	5	-	-	L
4287.45	Kr	-	[4 wh]	-	Me	4284.40	Ca	2	6 h	Ad		4280.996	Ce II	15	4	-	-
4287.431	Ti I	9	1	-	-	4284.331	Ru I	25	20	-	-	4280.875	Mo	4	3	-	-
4287.405	Ti I	100	50	-	-	4284.217	Cr I	-	30	-	-	4280.85	Er	12	2	-	m
4287.400	Nd	10	2	-	-	4284.13	Cs	-	[10]	Bs		4280.779	Sm II	200	200	-	-
4287.382	Co I	2	2	-	-	4284.084	Mn	80	20	-	-	4280.774	Nd	20	20	-	-
4287.32	Tb	10	1 h	-	-	4284.055	V I	20	20	-	-	4280.659	U	18	3	-	-
4287.27	Eu	2	-	-	Kn	4283.912	U	10	1	-	-	4280.61	Kr II	-	[5 hl]	-	Me
4287.13	Tb	8	-	-	-	4283.88	Sb II	-	[5]	Lg		4280.600	Re	6	-	-	-
4287.075	Mo	10	10	-	-	4283.869	Eu	12	2	-	-	4280.598	Cb	10	15	-	-

4280.5—4270.8 Å.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4280.578	Mo	2 15	-	4277.279	Nd	20 5	-	4274.035	Sm	3 1	-
4280.567	Th	4 1	-	4277.255	Ru I	7 -	-	4274.032	Th	10 8	-
4280.501	Gd	200 100	-	4277.242	Mo	30 30	-	4273.975	U	12 15	-
4280.49	Tb	5 1	-	4277.23	Pr	3 -	-	4273.9700	Kr I	- [1000]	S
4280.467	Ta	10 1 h	-	4277.198	U	2 2 h	-	4273.909	Pt	2 -	-
4280.405	Cr	80 50	-	4277.147	Os	12 1	-	4273.907	Ca	- 2	-
4280.380	Nd	25 15	-	4277.100	Cs II	- [50]	Sv	4273.87	Fe I	10 2	-
4280.36	Se II	- [150]	Bl	4276.974	Th	4 3	-	4273.788	Ce	2 -	-
4280.333	Ti	8 1	Bh	4276.958	V I	25 20	-	4273.74	Tb	3 W 2	-
4280.321	Sm II	8 4	-	4276.912	Mo	30 30	-	4273.739	Nd	10 2	-
4280.312	Zr I	4 4	-	4276.822	Rh I	10 3	-	4273.72	Hg	- [2 h]	St
4280.261	La I	50 30	-	4276.814	Th	10 8	-	4273.703	Rb II	- 2	Rr
4280.212	U	6 8	-	4276.75	Tb	50 w 2 h	-	4273.692	W	10 5	-
4280.168	Nd	6 2	-	4276.746	W	15 10	-	4273.63	Ho	2 2	Kn
4280.141	Ce	15 2	-	4276.74	Dy	15 -	Kn	4273.61	Eu	2 -	-
4280.105	Pr	60 30	Kn	4276.722	Zr I	2 d -	-	4273.524	Rb II	- 2	Rr
4280.079	Ti I	15 1	-	4276.686	Er	6 -	-	4273.517	Zr II	9 3	-
4280.05	Kr	- [2 h]	Me	4276.68	Te	- [50]	Bl	4273.48	Kr	- [4]	Me
4280.001	Mo	5 5	-	4276.678	Fe I	10 1	-	4273.445	U	8 5	-
4279.98	Se	- [10]	Bl	4276.660	Ti I	10 h 1	-	4273.444	Ce	20 2	-
4279.959	Cu II	- 5	Sh	4276.64	O II	- [15 h]	Mh	4273.426	Rh I	25 10	-
4279.946	Sm II	50 40	-	4276.54	Er	6 3	Ed	4273.40	Te	- [70]	Bl
4279.927	Sc II	10 3	-	4276.51	Cl II	- [30]	Ks	4273.363	Th	20 15	-
4279.78	Dy	8 -	Kn	4276.467	U	10 12	-	4273.317	Fe II	3 h 2 h	Do
4279.76	Ca	2 4	Ad	4276.433	Ti I	50 20	-	4273.303	Ti I	20 1	-
4279.748	Sm II	15 15	-	4276.333	Ce	4 -	-	4273.28	Li I	200 r 100 h	Fl
4279.69	Eu	10 -	Kn	4276.3	Na I	3 -	Fo	4273.25	Gd	4 -	Kn
4279.666	Sm II	100 100	-	4276.295	Nd	5 3 h	-	4273.21	Pr	3 1	-
4279.501	Sm	4 2	-	4276.204	Eu	10 2	-	4273.2	Na I	3 -	Fo
4279.499	Cb	5 5	-	4276.203	Sm	4 4	-	4273.191	U	8 -	-
4279.48	Te	- [15]	Bl	4276.19	Pr	12 3	-	4273.18	Tb	8 1	-
4279.490	Fe I	5 1	-	4276.14	Tb	4 -	-	4273.176	Rb II	- 25	Rr
4279.390	Mo	3 -	-	4276.104	Co I	2 1	-	4273.14	Dy	4 4	Kn
4279.331	U	10 -	-	4276.039	Cu II	- 6	-	4273.066	Mo	20 10	-
4279.324	Ce	4 -	-	4276.031	W	10 4	-	4273.011	Ce	2 -	-
4279.3	Yt II	3 15	Me	4275.978	U	8 3	-	4272.969	Cb	2 4	-
4279.279	Ne I	- [15]	Ps	4275.973	Cr	30 15	-	4272.94	U	3 1	-
4279.25	Eu	8 -	Kn	4275.96	Dy	2 -	Kn	4272.93	Pr	5 1	-
4279.200	Re	3 -	-	4275.912	Eu	4 -	-	4272.910	Cr I	40 30	-
4279.167	Ce	2 -	-	4275.82	Pr	18 4	-	4272.885	Th	4 -	-
4279.056	Ta	30 10	-	4275.762	Nd	15 3	-	4272.87	Cs	- [10]	Bs
4279.023	Mo	8 100	-	4275.75	Kr	- [2]	Me	4272.855	Ca	2 -	-
4278.99	Pr	15 3	-	4275.727	U	12 8	-	4272.848	Hf II	12 20	-
4278.93	W	4 4	-	4275.676	Mo	12 12	-	4272.789	Nd	15 5	-
4278.92	V II	- 15	Me	4275.642	La II	40 500	-	4272.757	Eu	5 1	-
4278.89	F II	- [20 h]	Di	4275.561	Ce	25 4	-	4272.640	Rb II	- 2	Rr
4278.883	V	2 8 h	-	4275.560	Ne I	- [70]	Ps	4272.63	Pb I	- 30	Sx
4278.866	Ce II	20 5	-	4275.493	W	15 10	-	4272.55	Pb II	- 2	Kl
4278.850	Ne I	- [5]	Ps	4275.47	O II	- [50 h]	Mh	4272.49	Bi II	- 10 wh	Om
4278.82	As II	- 10	Ro	4275.45	Dy	5 -	Kn	4272.44	Er	4 1 h	-
4278.813	Ti I	25 3	-	4275.37	Tb	3 -	-	4272.432	Ti I	40 10	-
4278.689	Ru	7 -	-	4275.32	Pr	5 1	-	4272.34	Eu	4 -	-
4278.676	Mn	15 5	-	4275.21	Tb	15 1 h	-	4272.339	Ce	2 -	-
4278.62	Pr	10 2	-	4275.21	F II	- [100 h]	Di	4272.312	W	8 3	-
4278.61	Dy	3 -	Ed	4275.19	A	- [10]	Rt	4272.280	U	3 3	-
4278.598	Rh I	25 10	-	4275.17	Pr	12 2	-	4272.271	Pr	50 35	-
4278.584	Mo	5 2	-	4275.149	W	6 2	-	4272.22	Tb	3 -	-
4278.54	S II	- [30]	Hn	4275.131	Cu I	80 30	-	4272.168	A I	- [1200]	I
4278.51	Tb	200 100	-	4275.083	Nd	20 10	-	4272.143	Yt I	3 -	-
4278.410	W	10 3	-	4275.069	Co I	3 -	Dn	4272.12	Yb	6 -	-
4278.323	Th	8 2	-	4275.02	U	2 1	-	4272.057	Mo	15 15	-
4278.28	Ca	- 4	Ad	4275.00	Dy	5 -	Kn	4272.034	Ce	2 -	-
4278.248	Ce	10 1	-	4274.98	Ti II	- [100]	El	4272.008	Sm II	5 3	-
4278.227	Ti I	50 15	-	4274.959	Pr	3 -	-	4272.0	Ti	- [8]	Cx
4278.202	Gd	6 6	-	4274.938	W	10 5	-	4271.970	Er	4 1	-
4278.171	U	5 4	-	4274.905	Os	9 5	-	4271.87	Ca	- 7 h	Ad
4278.04	Pr	35 15	-	4274.892	Cb	5 5 h	-	4271.858	Sm	5 2	-
4277.99	In	- 2	Sq	4274.803	Cr I	4000 R 800 r	-	4271.764	Fe I	100 700	S
4277.95	Si	1 3	Sy	4274.769	Zr I	9 -	-	4271.764	Pr	18 15	-
4277.91	W	6 1	-	4274.689	Cb	5 3	-	4271.744	Cs	- [10]	Sv
4277.80	Hg II	- [10]	Ps	4274.656	Ne I	- [50]	Ps	4271.72	Tm	20 2	Me
4277.792	Cr	25 wh -	-	4274.584	Ti I	100 40	I	4271.558	Ca	2 h 3	-
4277.76	Tb	8 -	-	4274.550	W	20 12	-	4271.554	V I	20 10	-
4277.73	Dy	2 -	Kn	4274.41	Mo	- 30	Ex	4271.54	Sb II	- [10]	Lg
4277.64	Eu	4 -	m	4274.400	Ti I	5 -	-	4271.53	I	- [5]	Bl
4277.55	A II	- [80]	Rt	4274.36	Tb	2 h -	-	4271.513	Ta	40 5 wh	-
4277.537	U	5 4	-	4274.34	Re	20 w 4	-	4271.479	Ce	5 -	-
4277.51	F II	- [40 h]	Di	4274.331	A	8 -	-	4271.424	A	- [2]	Ms
4277.50	Lu	30 3	Me	4274.27	Pr	8 d -	-	4271.161	Fe I	400 300	-
4277.496	Cb	5 1	-	4274.24	Ti II	- [8]	El	4271.157	La I	30 -	-
4277.410	Mo	15 15	-	4274.182	Yt I	2 h -	-	4271.103	Th	5 3	-
4277.369	Zr II	4 1	-	4274.171	Gd	100 5	-	4271.070	Ce	2 -	-
4277.322	Th	20 12	-	4274.16	Sm	5 1	-	4271.061	Cr	30 12	-
4277.3	Rb	- [8]	Dr	4274.047	Mo	6 6	-	4270.908	W	5 3	-
				4274.04	Dy	5 2	Ed	4270.89	U	6 6	-

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R			
4270.834	Sm II	15	15	-	4267.802	S II	-	[60]	Hn	4264.32	Te	-	[30]	Bl
4270.788	Os	12	1	-	4267.78	Pr	12	-	-	4264.215	Fe I	35	4	-
4270.775	Gd	4 h	1 h	-	4267.741	La I	8	-	-	4264.114	Th	15	-	-
4270.73	Tb	3	-	-	4267.724	Ne I	-	[5]	Ps	4264.07	Ho	15	8	Kn
4270.716	Ce	25	-	-	4267.668	Ce	2	-	-	4264.008	Zr	5	-	-
4270.701	Sm II	5	3	-	4267.635	Cb	-	10 h	-	4263.995	Nd	2	-	-
4270.691	Cb	30	50	-	4267.493	Nd	-	200 wh	-	4263.947	Ce	10	-	-
4270.65	U	5	4	-	4267.303	U	12	10	-	4263.908	Nd	3	1	-
4270.61	Cl II	-	[25]	Ks	4267.298	Ta	1	20	-	4263.830	V II	-	3	-
4270.565	Nd	15	4	-	4267.286	Ne I	-	[2]	Ps	4263.812	Eu	3	1	-
4270.56	Hf	8	4	-	4267.27	C II	-	500	Fl	4263.805	Pr	50	5 w	-
4270.55	Yb	-	3 h	-	4267.24	As	-	3	-	4263.772	I	-	[15]	Ke
4270.508	Eu	15	-	-	4267.221	Ce	10	-	-	4263.769	Re	2 h	-	-
4270.45	Eu	15	2	Kn	4267.02	C II	-	350	Fl	4263.746	U	12	8	-
4270.431	Co I	2	-	-	4267.016	Gd	40	40	-	4263.744	Co I	2	-	-
4270.332	Th	6	3	-	4266.99	Yb	4	8 h	-	4263.68	Tb	12	-	-
4270.318	V I	20	4	-	4266.968	Fe I	70	30	-	4263.580	La II	150	150	-
4270.303	Rb II	-	8	Rr	4266.889	Yt I	2	-	-	4263.57	Xe II	-	[5 h]	Hu
4270.277	Gd	5	-	-	4266.821	Cr	30	1	-	4263.55	Tb	8	-	-
4270.254	U	3	2 h	-	4266.76	Eu	2	-	-	4263.511	Pt I	10	1 h	-
4270.245	Eu	20	2	-	4266.73	Pr	3	-	-	4263.44	Xe	-	[15 h]	Hu
4270.227	Ne I	-	[50]	Ps	4266.716	Nd	20	-	-	4263.440	Nd	15	4	-
4270.189	Ce II	25	-	-	4266.698	Ce	2	-	-	4263.427	Ce	40	-	-
4270.138	Ti I	50	3	-	4266.666	U	3	3	-	4263.419	U	6	5	-
4269.951	Cr	40	6	-	4266.622	Rb II	-	10	Rr	4263.396	Ru I	10	-	-
4269.930	Er	4	1	-	4266.608	Mo	2	15 h	-	4263.389	Hf	20	10	-
4269.84	Xe II	-	[20]	Hu	4266.601	Gd	50	-	-	4263.359	Th	10	3	-
4269.82	Re	2 h	-	-	4266.542	W	15	8	-	4263.355	Re	2 h	-	-
4269.780	W	15	10	-	4266.53	A	-	[200]	Rt	4263.315	W	25	15	-
4269.770	Sm II	6	3	-	4266.52	Dy	2	2 h	m	4263.312	K II	-	[40]	Dm
4269.762	V I	15	9	-	4266.45	Pr	4	-	-	4263.288	Kr I	-	[20]	IHu
4269.76	S II	-	[30]	Hn	4266.40	Lu	-	2 h	Me	4263.15	Pr	4	1	-
4269.724	Ne I	-	[70]	Ps	4266.37	Eu	3	-	-	4263.141	Cr	125	80	-
4269.706	Ir I	8	-	-	4266.362	Ir I	10	-	-	4263.134	Ti	125	35	-
4269.70	Tb	15	2	-	4266.35	Tb	30	1	-	4263.133	Ce	3	-	-
4269.67	Pr	18	1	-	4266.331	U	15	-	-	4263.120	U	-	2 h	-
4269.65	Hf II	10	20	-	4266.311	Sm II	9	1	-	4263.103	Mo	4	2	-
4269.613	U	20	30	-	4266.286	A I	-	[1200]	I	4263.066	Ce	3	-	-
4269.610	Os	30	3	-	4266.222	Ti I	20	-	-	4263.065	Ir	3	-	Ab
4269.60	Dy	10	2	Kn	4266.181	Mo	25	20	-	4262.890	U	10	5	-
4269.495	Eu	5	1 h	-	4266.081	Ce	2	-	-	4262.80	Pr	12	2	-
4269.494	La II	150	150	-	4266.04	Ho	5	2	Kn	4262.795	Ce	6	-	-
4269.392	W	40	30	-	4266.038	Ir I	10	-	-	4262.72	Hf II	10	15	Me
4269.364	Os	12	1	-	4266.018	Cb	15	20	-	4262.716	Th	4	1	-
4269.32	Tb	5	-	-	4265.98	Tb	3	-	-	4262.678	Sm II	200	150	-
4269.296	Cr	-	3	-	4265.925	Ce	2	-	-	4262.59	Tb	2	-	-
4269.282	Mo	30	30	-	4265.924	Mn	100	50	-	4262.479	Ne I	-	[2]	Ps
4269.259	Pt I	2	1 h	-	4265.83	Dy	6	2	Kn	4262.367	Ce	2	-	-
4269.251	Ce	5	2	-	4265.811	Eu	6	-	-	4262.356	Cr	30	2	-
4269.100	Pr	12	4	-	4265.741	Zr I	5	-	-	4262.334	La I	15	2 h	-
4269.085	U	3	1	-	4265.710	Ce	2	-	-	4262.314	Pr	10	4	Kn
4268.99	C I	-	[10]	Jn	4265.708	Ti I	12	-	-	4262.269	W	7	8	-
4268.942	Ir	10	2	-	4265.66	Pr	3	-	-	4262.239	Nd	15	3	-
4268.928	Ti I	8	-	-	4265.630	U	3	2	-	4262.177	Eu	2	-	-
4268.89	Cs	-	[10]	Bs	4265.607	Ru I	12	-	-	4262.161	V I	20	12	-
4268.851	U	12	10	-	4265.52	A	-	[2]	Ms	4262.155	U	6	2	-
4268.81	Kr II	-	[100 whl]	Me	4265.490	Pr	3	-	Kn	4262.133	Cr	40	8	-
4268.788	Cr	30	3	-	4265.305	Ir I	60	2	-	4262.095	Gd	150	10	-
4268.761	Ir I	3	-	-	4265.275	Ti I	20 h	-	-	4262.053	Cb	20	15	-
4268.758	Fe	30	10	-	4265.237	Sm	4	-	-	4262.02	Lu	-	8	Me
4268.75	Re	2 h	-	-	4265.186	Ce	4	-	-	4261.93	Ga	-	4	Kl
4268.739	Gd	40	40	-	4265.178	U	6	-	-	4261.907	Cr II	-	30	-
4268.668	Cb	5	10	-	4265.170	V	30	15	-	4261.888	Ir	10	-	-
4268.643	V I	40	20	-	4265.13	As	-	30	Ro	4261.88	Hg	-	[70]	Ps
4268.57	Kr II	-	[60 whl]	Me	4265.12	Ra I	-	[6]	Rs	4261.837	Nd	20	10	-
4268.56	Tm	3	-	-	4265.117	Mo	15	15	-	4261.83	Tb	8	-	-
4268.438	Co I	2	2	-	4265.074	Sm II	60	25	-	4261.8	bh Ca	2	-	L
4268.330	Pd I	10 h	-	-	4264.99	Tb	8	-	-	4261.796	Pr	15	2	-
4268.31	Dy	8	-	Kn	4264.987	W	3	1	-	4261.794	Eu	4	-	-
4268.301	Ce	10	-	-	4264.929	Sb	-	10 h	Sp	4261.78	Ga II	-	2	Sy
4268.283	Nd	3 d	-	-	4264.911	Zr II	3	2 h	-	4261.714	Cb	5	8	-
4268.255	Ta	50	15 h	-	4264.909	Eu	12	2 h	-	4261.615	Cr	35	8	-
4268.101	Ir I	200	15	-	4264.86	Os	4	2	-	4261.602	Ti I	70	8	-
4268.10	Hf II	-	5	Me	4264.746	Er	20	3	-	4261.505	U	8	8	-
4268.075	Mo	20	20	-	4264.74	Fe I	12	2	-	4261.480	Ce	4	-	-
4268.052	W	10	5	-	4264.72	Tb	4	-	-	4261.443	Mo	20	20	-
4268.032	Co I	3 h	-	-	4264.69	Eu	4	-	-	4261.425	Zr I	6	-	-
4268.016	Zr I	40	1	-	4264.688	Ce	10	-	-	4261.354	Cr I	125	50	-
4268.009	Ne I	-	[70]	Ps	4264.675	Cs	-	[50]	Sv	4261.296	Mn	20	5	-
4267.95	Ba II	-	[80]	Rs	4264.65	Hg	-	[20]	Ps	4261.276	Th	5	2	-
4267.934	U	15	4	-	4264.631	Mo	15	15	-	4261.26	Re	5	-	-
4267.92	Dy	7	-	Kn	4264.63	Tb	6	-	m	4261.258	Ir	25	-	-
4267.852	Ce	2	-	-	4264.58	Cl I	-	[6]	Ks	4261.22	Cl II	-	[20]	Ks
4267.85	Eu	10	-	Kn	4264.386	Ba I	15	4	Sz	4261.210	Zr I	7	-	-
4267.830	Fe	125	60	S	4264.370	Ce II	10	-	-	4261.208	V I	9	3	-

4261.1—4251.7 Å.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4261.17	Eu	4	2	4258.12	Eu	7	-	4255.24	Tb	25	1 h
4261.164	Ce	18	1	4258.101	Nd	5	-	4255.178	Ce	2	-
4261.08	Te	-	[300]	4258.093	Ir	4	-	4255.110	Re	2 h	-
4261.069	Ce	3	-	4258.07	Ti II	-	[5]	4255.00	Pr	4	1
4261.04	Pr	4	1	4258.043	Zr II	25	8	4254.955	Mo	25	25
4260.98	Hf	20	-	4257.94	Pr	3	-	4254.95	A	-	[10]
4260.980	Eu	12	-	4257.850	Eu	10	1	4254.938	Fe	2	1
4260.977	Mo	15	15	4257.82	Ne II	-	[30]	4254.905	Ce	8	-
4260.915	Re I	10	-	4257.813	Ce	2	-	4254.85	Kr II	-	[100 h]
4260.898	Ir	10	-	4257.81	Tb	2	-	4254.77	Yb	4	4
4260.854	Os I	200	200	4257.783	Nd	20	10	4254.75	N I	15	-
4260.85	Kr II	-	[5 h]	4257.72	Dy	6	2	4254.701	Ce	20	-
4260.802	Ge	20	10 h	4257.71	U	2	2	4254.694	Cb	10	10
4260.78	Tb	8 h	-	4257.69	Pr	5	1	4254.458	Th	8	6
4260.755	V II	-	3	4257.66	Yb	7	15	4254.43	Ho	100	20
4260.751	Ti I	12	1	4257.659	Mn	100	40	4254.429	Mo	10	5
4260.723	Ce	2	-	4257.593	Re I	125 w	-	4254.425	V II	3	5
4260.655	Mo	20	20	4257.502	Th	8	2	4254.420	Pr	35	18
4260.58	Br	-	[4]	4257.476	Ce	3	-	4254.392	Cb	10	15
4260.55	Sb II	-	[10]	4257.42	S II	-	[30]	4254.370	Ce	8	-
4260.479	Fe I	400	300	4257.373	Ir	30	-	4254.346	Cr I	5000 R	1000 R
4260.359	Mo	20	20	4257.369	V I	15	9	4254.32	Er	7	1
4260.345	Ce	2	-	4257.368	Cr I	35	1	4254.288	W	4	3
4260.342	Th	4	1	4257.276	Nd	12	4	4254.152	Bi I	10	10
4260.293	W	10	5	4257.17	Tb	2	-	4254.13	Ga	-	2
4260.14	I II	-	[15]	4257.121	Ce II	20	1	4254.12	Be I	-	[5]
4260.134	Fe I	7	3	4257.1	bh Zr	4	-	4254.060	W	8	2
4260.112	Gd	30	10	4257.020	V	-	5	4254.03	Gd	3	-
4260.06	Pr	3	1	4256.99	Mo	3	2	4254.004	Ce	3	-
4260.031	Ir	25	-	4256.95	U	10	3	4254.00	Tb	5	-
4260.011	Sb	-	2	4256.915	La I	50	-	4253.98	O II	-	[100 h]
4260.004	Ru I	12	-	4256.82	Ti II	-	[2]	4253.93	Fe	2	1
4260.003	Fe I	15	5	4256.820	Nd	15	3	4253.875	Th	6	4
4259.96	Tb	5	-	4256.80	Mo	3	3	4253.868	Nd	12	3
4259.941	W	12	5	4256.74	Yb	5	3 h	4253.848	U	12	3
4259.938	Pt	5	-	4256.714	Ce	2	-	4253.831	Ce	3	-
4259.89	Au II	-	15	4256.69	Ca	-	6	4253.814	Eu	15	3
4259.883	Re I	3	-	4256.620	Cr I	12	1	4253.76	Be I	-	[15]
4259.748	Ce	15	1	4256.60	Mo	-	15	4253.74	O II	-	[50 h]
4259.64	Pr	5 d	-	4256.498	Ne I	-	[2]	4253.715	Sm II	5	2
4259.62	Bi II	-	60 wh	4256.490	La	2	2	4253.700	U	8	2
4259.608	Cb	12	2	4256.479	Nd	40	20	4253.695	Ce	25	40
4259.600	Nd	3	-	4256.445	Zr I	25	-	4253.65	Dy	3	-
4259.588	Sc	8	-	4256.396	Sm II	150	150	4253.619	Gd	50	50
4259.52	Cl II	-	[35]	4256.354	Ce II	3	-	4253.582	Er	9	2
4259.51	La II	-	2 h	4256.34	Tb	9	-	4253.576	Mo	8	5
4259.452	U	12	3	4256.33	Pr	4	1	4253.569	Zr I	20	3
4259.44	Kr	-	[80 hs]	4256.323	Dy	25	8	4253.544	Th	8	3
4259.43	Cu I	25 wh	2 wh	4256.239	Nd	10	-	4253.51	Cl II	-	[75]
4259.393	Sm II	3	2	4256.227	Th	6	1	4253.5	Sr	2	-
4259.361	A I	-	[1200]	4256.223	Fe I	4	1	4253.370	Gd	50	4
4259.357	W	30	20	4256.204	Dy	8	-	4253.356	Ce	40 s	3
4259.338	Mn	8	10	4256.17	Ga	-	2	4253.34	Cu I	7 wh	-
4259.312	V I	15	9	4256.155	Ce II	12	1	4253.28	N I	-	[15]
4259.30	Hg II	-	[20]	4256.102	Th	12	10	4253.05	Be I	-	[20]
4259.227	Ce	2	-	4256.10	Tb	8	-	4253.032	Pr	12	2
4259.200	U	10	8	4256.10	Te	-	[50]	4252.972	Cb	30	50
4259.18	S II	-	[15]	4256.09	Ti II	-	[2]	4252.97	Sr I	2	-
4259.158	Cr I	35	1	4256.037	Zr I	60	-	4252.925	La II	5	2
4259.113	Ir	200	10	4256.036	Ti I	80	15	4252.79	Dy	6	2
4259.064	Ce	10	-	4255.992	Ce	5	-	4252.775	Ne I	-	[2]
4259.987	Ru I	15	-	4255.944	Cb	3	10	4252.69	Tb	4	5
4259.958	Fe I	8	2	4255.941	Eu	4	1 h	4252.67	Kr II	-	[50 hs]
4259.933	I	-	[20]	4255.858	Nd	12	2	4252.661	Cr II	-	10
4259.913	Cb	5	10	4255.852	Fe	2	1	4252.637	Pr	3	-
4258.883	Ce	3	-	4255.789	Th	4	-	4252.538	Os	9	-
4258.660	Mo	20	15	4255.784	Ce	40	6	4252.52	Yb	9	20
4258.62	Ho	3	1 h	4255.77	Yb	5	8	4252.514	Ir	4	-
4258.614	Fe I	12	2	4255.752	Re I	20	-	4252.494	Mo	6	5
4258.59	A	-	[5]	4255.729	Co	3 h	-	4252.455	Ce	3	-
4258.561	Sm II	50	40	4255.708	Ru	6	-	4252.437	Nd	30	15
4258.56	Dy	15	2	4255.702	U	8	6	4252.426	U	15	20
4258.535	Ti I	70	7	4255.66	Pr	4	1	4252.418	Ne I	-	[2]
4258.532	W	15	5	4255.62	A	-	[5]	4252.41	Tm	3	-
4258.49	U	2	2	4255.57	Gd	10	-	4252.4	Na I	3	-
4258.466	Rh I	2	1	4255.52	Ga II	-	[3]	4252.37	Dy	6	-
4258.401	Ce	8	-	4255.509	Ca	-	6	4252.308	Co I	150	-
4258.332	Zr I	5	2	4255.502	Cr	30	30	4252.243	Cr I	35	10
4258.330	Ca	2	4	4255.499	Fe	5	2	4252.107	Ni I	2	-
4258.324	Fe I	60	4	4255.442	Cb	30	50	4252.07	Pr	4	1
4258.321	Ce	4	-	4255.44	Gd	10	-	4251.938	Er	18	1
4258.23	Tb	30 d	3	4255.38	U	2 h	1 h	4251.873	Mo	60	60
4258.218	Ce	5	-	4255.361	Ce II	10	-	4251.858	Ce	10	1
4258.155	Fe II	2	2	4255.339	Re	2 h	-	4251.788	Sm II	200	200
4258.14	Dy	8	-	4255.27	Eu	15	-	4251.761	Ti I	10	1

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
4251.736	Gd	300	10	-	4247.695	Ce	2	-	-	4244.373	W	40	20	-
4251.73	Dy	7	-	Kn	4247.694	Re	3	-	-	4244.372	U	25	25	-
4251.72	Tb	12	3	Ed	4247.690	Cb	2	5 h	-	4244.244	Sm	3	1	-
4251.606	Ti I	20	3	-	4247.662	Pr	60	35	-	4244.21	Yb	-	2 h	Me
4251.602	Ce	8	1	-	4247.653	Ce	2	-	-	4244.143	Re I	30	-	-
4251.57	Xe II	-	[50 whl]	Hu	4247.599	Th	8	5	-	4243.986	Th	5	2	-
4251.490	Pr	40 w	15 w	-	4247.433	Fe I	200	100	-	4243.929	Ta	12	8	-
4251.489	Yb	15	1	-	4247.430	U	5	4	-	4243.91	Se II	-	[8]	Bt
4251.389	Mo	5	3	-	4247.395	Sm II	15	15	-	4243.888	Rb II	-	2	Rr
4251.364	Ce	5	-	-	4247.367	Nd	50	20	-	4243.88	Xe II	-	[5]	Hu
4251.33	Tb	10	-	-	4247.36	Dy	30	4	Kn	4243.845	Gd	60	100	-
4251.326	U	10	6	-	4247.136	U	10	8	-	4243.817	Zr	3	-	-
4251.303	Sm	2	1	-	4247.069	Eu	15	3	-	4243.804	Ir	12	2 h	-
4251.205	Yt I	25	8	-	4246.938	Ce	3	-	-	4243.789	Co	12	-	-
4251.185	A I	-	[800]	I	4246.88	P	70	[150 w]	Sa	4243.76	Ho	3	2	Kn
4251.170	Os	6	-	-	4246.879	Nd	10	4	-	4243.71	A II	-	[2 h]	Rt
4251.15	Te	-	[70]	Bl	4246.829	Sc II	80	500	-	4243.65	Tb	2	-	-
4250.941	U	-	2 h	-	4246.813	Re	25	-	-	4243.638	W	10	3	-
4250.91	Ga II	-	[2]	Sy	4246.734	Ru	20	-	-	4243.57	A	-	[20]	Ms
4250.84	Dy	5	-	Ed	4246.711	Ce	30	4	-	4243.56	I I	-	[3]	Db
4250.816	Ce	8	-	-	4246.616	Mo	-	25	-	4243.557	Zr I	8	-	-
4250.790	Fe I	400	250	S	4246.59	Tb	12	1 h	-	4243.546	U	3	3	-
4250.689	Mo	5	125	-	4246.547	Gd	150	3	-	4243.528	Pr	20	8	-
4250.68	Ne II	-	[50]	Bl	4246.47	Te	-	[15]	Bl	4243.45	Dy	10	2	Kn
4250.67	Ga	-	4	Kl	4246.398	Ce	10	-	-	4243.39	Cd	-	2	Tk
4250.664	Ce	18	-	-	4246.38	Tm	20	4	-	4243.368	Fe	10	3	-
4250.58	Kr II	-	[150]	Me	4246.338	Th	3	1	-	4243.362	W	5	1	-
4250.41	A	-	[2]	Ms	4246.334	Ru	15	-	-	4243.347	U	8	8	-
4250.401	Pr	18	12	-	4246.295	Cb	8	10	-	4243.298	Ce	6	-	-
4250.35	Dy	8	-	Kn	4246.261	U	30	2	-	4243.26	As	-	100	Ro
4250.339	Th	12	10 l	-	4246.16	F II	-	[300 h]	Di	4243.14	Mo	-	25	-
4250.275	Gd	3	-	-	4246.15	Pr	10	2	-	4243.082	U	6	6	-
4250.24	Tb	5	-	-	4246.115	Sc I	4	-	-	4243.061	Ru I	100	40	-
4250.219	Nd	4	-	Kn	4246.13	Eu	12	-	Kn	4243.06	Tb	3	-	-
4250.130	Fe I	250	150	-	4246.095	Ca	2 h	5	-	4243.00	Dy	4	-	Kn
4249.991	La II	100	50	-	4246.090	Fe	80	30	-	4242.894	V	-	15 h	Me
4249.92	S II	-	[3]	Hn	4246.022	Mo	30	30	-	4242.86	Sb II	-	2 h	Dv
4249.89	Br	-	[20]	Bl	4245.978	Ce II	8	2	-	4242.853	Cr I	15	-	-
4249.685	Th	12	10	-	4245.950	U	1	3	-	4242.852	Ce	5	-	-
4249.677	Ce	4	-	-	4245.923	Dy	25	4	-	4242.803	Mo	15	4	-
4249.57	P	-	[100]	Gu	4245.880	Ce	6	2	-	4242.725	Th	5	2	-
4249.538	Ne I	-	[2]	Ps	4245.869	Cd	-	2	-	4242.723	Co II	15	3	-
4249.536	Sm II	50	40	-	4245.86	Eu	5	1	-	4242.632	Cb	10	20	-
4249.525	U	4 h	3 h	-	4245.842	Hf II	9	12	-	4242.617	Ba	10	5	-
4249.494	Mo	5	5	-	4245.565	Co I	2	-	m	4242.617	Zr I	3	-	-
4249.484	Pr	20	2	-	4245.529	Ce	4	-	-	4242.6	Rb	-	[150]	Dr
4249.458	W	5	12	-	4245.513	Ti	20	3	-	4242.588	Fe I	3	-	-
4249.457	Cb	5	8	-	4245.464	Th	4	1	-	4242.572	U	3	3	-
4249.43	Eu	20	-	Kn	4245.46	Pr	10	1	-	4242.55	Tb	12	2 h	-
4249.4	Na I	3	-	Fo	4245.39	Eu	15 d	1	m	4242.47	Eu	6	1 h	Kn
4249.40	As II	-	10	Ro	4245.39	Ho	3	2	Ex	4242.47	Pb II	-	10	Kl
4249.37	A	-	[20]	Ms	4245.38	Xe II	-	[200 h]	Hu	4242.47	Mg II	4	-	Fl
4249.34	Hf	4	15	-	4245.350	Ta	30	15	-	4242.381	Cr II	4	50	-
4249.32	Tb	2	-	-	4245.345	Gd	25	-	-	4242.290	U	6	3	-
4249.123	Ti I	60 h	3 h	-	4245.34	Sb	-	2 h	Sp	4242.26	Cu I	20	-	-
4249.099	Ce	2	-	-	4245.33	In	-	5	Sq	4242.259	Ce	5	-	-
4249.085	Rb II	-	15	Rr	4245.260	Fe I	80	40	-	4242.25	Tb	4	-	-
4249.083	Pr	12	2	-	4245.222	Ce	3	-	-	4242.20	Ne II	-	[5]	Bn
4249.05	Tb	2	-	-	4245.173	Sm II	8	6	-	4242.20	Pb II	-	2	Sx
4249.005	Ce	5	-	-	4245.16	Hf	10	2	-	4242.15	Tm	500	100	Me
4248.999	Ir	2	-	-	4245.14	Tb	8	-	-	4242.013	Zr I	4	-	-
4248.957	Cu I	80	15	-	4245.14	Pr	10 w	1 w	-	4242.009	Co	10	-	-
4248.956	Ca	2 h	10	-	4245.117	Ir	2	-	-	4241.973	Cs	-	[10]	Sv
4248.822	V II	4	4	-	4244.99	Pb II	-	20	Gs	4241.93	Hf II	2	10	Me
4248.806	Ir	4	-	-	4244.981	Rb II	-	2	Rr	4241.886	Co I	3 h	-	-
4248.709	Cr	35	2	-	4244.971	Nd	10	2	-	4241.83	Dy	2	-	Kn
4248.676	Ce	60	8	-	4244.916	Ce	6	-	-	4241.822	Re I	2	-	-
4248.658	Cb	3 h	5	-	4244.86	Tb	2	-	-	4241.80	N II	-	[100 h]	Fl
4248.56	Tb	10	1 h	-	4244.832	Ru I	25	-	-	4241.77	Au I	40	30	-
4248.44	Dy	7	2	Kn	4244.800	Mo	4	80	-	4241.743	Ce	3	-	-
4248.344	Cr I	30	2	-	4244.800	Rb II	-	2	Rr	4241.7	Pd I	2 h	-	Ex
4248.32	La II	-	2	Me	4244.79	Dy	5	2	Kn	4241.687	Zr I	100	2	-
4248.226	Fe I	150	40	-	4244.751	Eu	10 d	-	-	4241.669	U	40	50	-
4248.193	Co I	2	-	m	4244.72	Ra II	-	[40]	Rs	4241.644	Ce	2	-	-
4248.147	Nd	10	4	-	4244.696	Sm II	100	80	-	4241.6	Na I	3	-	Fo
4248.143	Ru I	12	-	-	4244.664	Ir	2	-	-	4241.521	Os	9	-	-
4248.089	Ce	6	1	-	4244.562	Nd	12	2	-	4241.514	Co I	3 h	-	-
4248.00	Se II	-	[100]	Bl	4244.552	Ce	5	-	-	4241.449	Cb	3	5	-
4247.994	Th	15	12	-	4244.55	P II	-	[30]	Gu	4241.448	W	30	10	-
4247.964	Ce	2	-	-	4244.53	Tb	5	1 h	-	4241.405	Ce II	5	-	-
4247.900	U	8	1	-	4244.490	Pr	4	1	-	4241.387	Re I	30	-	-
4247.888	Yb	3	7	-	4244.470	Ce	3	-	-	4241.38	Cl II	-	[60]	Ke
4247.831	Eu	5 h	2	-	4244.443	Rh I	15	5	-	4241.318	V I	15	8	-
4247.73	Eu	8	-	Kn	4244.436	Rb II	-	25	Rr	4241.30	Pr	10	2	-
4247.7	Rb	-	[8]	Dr	4244.41	Xe II	-	[15]	Hu	4241.282	Gd	10	-	-

4241.2—4231.3 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4241.244	Ce	3	-	4237.780	Ti I	8	-	4234.296	Zr	3 h	-
4241.208	Nd	12	4	4237.710	Cr I	70	-	4234.29	Eu	3	-
4241.202	Zr I	100	2	4237.657	Sm II	60	50	4234.250	V II	1	3
4241.20	La II	-	15 hl	4237.54	Dy	8	2	4234.211	Ce	30	2
4241.194	Cr	10	-	4237.519	Eu	15	2	4234.196	Nd	20	10
4241.156	Re I	20	-	4237.49	Hg	-	[20]	4234.099	Eu	2	-
4241.112	U	10	2	4237.429	Zr I	15	-	4234.09	Cl II	-	[50]
4241.112	Fe I	1	4	4237.35	Tb	2	-	4234.062	U	8	8
4241.08	Tb	4	-	4237.273	Nd	10	2	4234.000	V I	15	6
4241.053	Ru I	100	20	4237.23	A II	-	[40]	4233.996	Co I	100 W	-
4241.019	Pr	50	12	4237.205	Ce	8 s	-	4233.985	Hg	-	[20]
4240.9	Eu	2	1	4237.2	Rb	-	[8]	4233.976	Mo	5	5
4240.831	Mo	30	25	4237.195	Zr I	4	-	4233.952	Ce II	8	-
4240.81	Dy	2	-	4237.167	Fe	5	2	4233.86	Ne	-	[30]
4240.8	bh Ca	3	-	4237.162	Mo	20	10	4233.742	U	-	4 h
4240.75	Dy	3	-	4237.139	Ce	4	-	4233.738	Ca	-	4
4240.75	Al II	-	[15]	4237.12	Yt I	2 h	-	4233.612	Fe I	250	150
4240.74	Ca	-	8 h	4237.119	Th	5	2	4233.610	Sc I	10	2
4240.705	Cr	200	30	4237.04	Er	2	-	4233.609	Eu	8	-
4240.680	Gd	4	-	4237.010	Pr	5	1	4233.491	Mo	8	8
4240.669	Ce	2	-	4236.996	Cb	1	5 h	4233.460	Os	12	3
4240.587	U	10	10	4236.98	N	-	[30 h]	4233.453	Yb	3	-
4240.584	Ce	5	-	4236.93	Tm	15	20	4233.43	Dy	5	-
4240.54	Sr II	1	3	4236.88	Br	-	[25]	4233.43	Kr	-	[2 h]
4240.493	Ir	15	-	4236.815	V II	-	3	4233.368	Mo	4	4
4240.456	Ca I	10	10	4236.740	Sm II	60	50	4233.32	O	-	[100]
4240.453	Sm	5	1	4236.731	Ce	2	-	4233.291	Th	10	6
4240.40	I II	-	[3]	4236.674	Ru	20	-	4233.277	Re I	20	-
4240.370	Fe	30	5	4236.667	Ir	10	-	4233.266	Cr II	-	6
4240.358	V I	15	9	4236.64	Kr II	-	[100 hl]	4233.2	bh Sr	2	-
4240.339	Zr I	100	1	4236.635	Pr	10	3	4233.197	Ce	15	1
4240.279	Mo	25	20	4236.576	Sm	6	1	4233.168	Fe II	100	100
4240.183	U	-	2	4236.554	Zr II	8	1	4233.147	Nd	12	3
4240.134	W	8	2	4236.45	Si	-	3 wh	4233.134	Pr	15	5
4240.13	Tb	12	2 h	4236.447	U	10	6	4233.134	U	12	1
4240.120	Eu	3	-	4236.372	Ni I	5	-	4232.998	W	12	4
4240.084	V I	3	-	4236.355	Ce	15	-	4232.958	Re I	20	-
4240.076	Mo	25	20	4236.239	Re	25	-	4232.952	V I	10	3
4240.033	Pr	12	3	4236.23	Eu	3	-	4232.941	Gd	4	-
4240.032	Ru	6	-	4236.210	Pr	20 w	3 w	4232.866	Cr I	60	-
4239.963	Re	3	-	4236.063	Zr I	8	-	4232.82	Tb	15	-
4239.95	Ne II	-	[15]	4236.042	U	12	10	4232.732	Fe I	10	1
4239.93	Tb	5	-	4236.023	Ce	30	1	4232.65	Pr	8	1 h
4239.912	Ce	35	4	4236.0	C	-	[10 h]	4232.586	Mo	125	100
4239.868	Dy	50	4	4235.943	Yt I	60	30	4232.569	Ce II	20	2
4239.860	Er	12	-	4235.942	Fe I	300	200	4232.54	Yt I	3	-
4239.849	Fe I	40	15	4235.940	Ta	5 h	5	4232.462	Eu	12	3
4239.828	Nd	20	10	4235.890	Gd	5	-	4232.460	V I	10	3
4239.74	Br	-	[4]	4235.872	Sm	10	4	4232.46	Gd	15	-
4239.740	U	10	10	4235.756	V I	10	3	4232.443	Hf II	20	6
4239.733	Fe	30	10	4235.728	Yt II	3	20	4232.43	Pb II	-	[2]
4239.725	Mn	100	50	4235.602	Eu	400 r	-	4232.39	U	12 h	5 h
4239.652	Ru	7	-	4235.49	Cl II	-	[25]	4232.378	Nd	40	15
4239.641	Ce	5	-	4235.47	I II	-	[25]	4232.330	Pr	5	1
4239.573	Ba I	10	4	4235.468	Th	6	1	4232.322	Ru I	40	-
4239.565	Sc I	5	-	4235.34	Tb	20	1 h	4232.31	Br	-	[8]
4239.47	Pr	5	1	4235.290	Mn	80	100	4232.222	Cr	70	5
4239.448	Cu II	-	6	4235.290	Sc I	2 h	-	4232.19	Tb	20	3
4239.314	Zr I	100	5	4235.229	Nd	15	6	4232.188	Cs	-	[25]
4239.28	Tb	12	-	4235.18	Er	2	-	4232.093	Zr	3	-
4239.194	Mo	15	10	4235.14	Eu	2	-	4232.055	V II	1	6
4239.073	Mo	15	12	4235.140	Mn	80	-	4232.050	Ce	20	2
4239.021	Ce	3	-	4235.06	Gd	6	-	4232.04	Pr	4	1
4238.960	V	6	2	4235.034	Mo	10	8	4232.037	U	15	15
4238.957	Cr I	100	15	4235.02	Eu	6	-	4232.033	Dy	20	2
4238.821	Fe II	200	100	4234.991	Re I	15 w	-	4232.026	Er	10	-
4238.785	Gd	200	200	4234.989	Th	6	3	4232.019	Yb	20	2
4238.734	Sm	5	-	4234.83	Dy	10	-	4231.952	Cb	8	10
4238.705	Eu	15	2	4234.79	Ho	2	-	4231.942	W	3	2
4238.6	Na I	3	-	4234.78	Er	12	2	4231.921	Sc	10	-
4238.593	La I	6	-	4234.727	Ce II	12	-	4231.88	Tb	12	-
4238.584	Re I	20	-	4234.688	U	10	8	4231.745	Ca	30	5
4238.557	Ce	4	-	4234.656	Ti	12	1	4231.74	Te	-	[30]
4238.44	Dy	7	2	4234.632	Zr I	25	1	4231.728	W	10	2
4238.440	Co I	2	-	4234.63	Tb	4	-	4231.703	Fe	3	1
4238.379	La II	500	300	4234.574	Sm II	60	40	4231.676	U	25	-
4238.25	Xe II	-	[200 h]	4234.56	Yb	4	15	4231.664	Cr	3	-
4238.039	Sc I	12	-	4234.555	U	5	2	4231.643	Sc I	6	2
4238.039	Fe I	80	15	4234.530	V	18	15	4231.632	Zr II	9	5
4238.032	Re	15	-	4234.524	V I	15	6	4231.625	Mo	5	4
4238.028	Mo	-	5	4234.515	Cr	60	2	4231.61	Hf II	-	4
4237.893	Ti I	20	8	4234.422	Re I	15 w	-	4231.60	Ne II	-	[50]
4237.812	Cb	3	5 h	4234.408	Cs	-	[20]	4231.364	Cu II	-	8
4237.798	Sc	12	2	4234.351	W	25	7	4231.36	Tb	5	-
4237.798	Ce	8	-	4234.306	Th	5	2	4231.35	C I	-	[5]

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4231.329	Ce	2	-	4228.025	Nd	12	5	4225.148	Gd	20	10
4231.322	W	7	3	4227.982	Al II	-	[20]	4225.13	Ho	3	2
4231.23	Eu	2	-	4227.98	In II	-	[10]	4225.12	F	-	[20 h]
4231.20	Hf	5	-	4227.94	Yb	-	10	4225.109	Co	5	-
4231.188	U	6	6	4227.936	Cu II	-	7	4225.10	Hf II	-	5
4231.174	Ce	3	-	4227.923	Al II	-	[6]	4225.092	Ru	25	-
4231.151	Nd	10	2	4227.87	Hg	-	[70]	4225.028	Gd I	15	-
4231.143	V II	1	2	4227.861	Al II	-	[2]	4224.988	W	-	12
4231.07	B	3	2	4227.83	N II	-	[10 h]	4224.98	I	-	[8]
4231.040	Ni I	15	-	4227.758	Zr I	150	8	4224.929	Mo	5	51
4230.98	S II	-	[35]	4227.746	Ce	40	5	4224.92	Cl II	-	[15]
4230.953	La II	150	50	4227.744	V I	10	5	4224.88	Eu	4	-
4230.827	Ta	-	10 W	4227.719	Nd	20	8	4224.85	Tb	5	-
4230.667	Pr	8	2	4227.658	Th	3	1	4224.847	Nd	15	5
4230.636	Cr II	-	[30]	4227.650	Ti I	18	2	4224.793	Ti I	40	8
4230.63	Eu	5	1	4227.58	Eu	8	-	4224.766	Mo	5	3
4230.61	Tb	5	-	4227.500	Al II	-	[30]	4224.765	W	10	2
4230.556	Ce	5	-	4227.46	Re I	200 W	-	4224.74	N	-	[15]
4230.515	U	6	-	4227.432	Fe I	300	250	4224.68	Dy	6	-
4230.481	Cr I	70	8	4227.412	Ce	10	-	4224.650	Zr I	3	-
4230.444	Cu II	-	3	4227.406	Al II	-	[8]	4224.649	Ir	3	-
4230.431	Th	5	1	4227.330	U	6	8	4224.616	Th	5	3
4230.35	N I	-	[15]	4227.3	Rn I	-	[15]	4224.613	Ta	15 s	-
4230.316	Cb	3	5	4227.2	Hg	-	[100]	4224.57	Ne II	-	[5]
4230.314	U	5	5	4227.16	In II	-	[50 h]	4224.552	Ce	8	1
4230.312	Ru I	60	-	4227.145	Gd	50	20	4224.517	Fe I	60	15
4230.24	Yb	-	4	4227.100	Cs II	-	[50]	4224.515	V II	2	3
4230.202	Er	25	-	4227.085	Mo	3	25	4224.514	Cr	60	12
4230.202	Rh I	10	3	4227.02	A II	-	[10]	4224.43	P II	-	[15]
4230.126	Hg	-	[20]	4226.992	Nd	6	5	4224.427	U	8	10
4230.120	Ce	12 l	-	4226.915	W	15	3	4224.31	Ti	-	[8]
4230.05	Se II	-	[40]	4226.809	Al II	-	[35]	4224.30	Eu	3	-
4230.00	Br II	-	[12]	4226.758	Cr	125	30	4224.30	Sb	-	8 wh
4229.979	Ce	3	-	4226.735	Ir	30	-	4224.28	Tb	12	-
4229.955	Co I	3 h	-	4226.734	Ce	50	30	4224.256	Yt	15	-
4229.89	A	-	[10]	4226.728	Ca I	500 R	50 R	4224.237	Sm II	15	5
4229.831	Cb	5	5	4226.726	Yt	5	15	4224.221	Ce	2	-
4229.822	U	2	2	4226.726	Mo	15	2	4224.22	Gd	5	-
4229.808	Gd	15	20	4226.656	Ru I	15	-	4224.176	Fe I	20	-
4229.80	Pr	8	1	4226.65	A II	-	[2]	4224.176	Fe I	200	80
4229.761	Fe I	20	2	4226.628	Ir	5	-	4224.138	V I	12	9
4229.702	Sm II	40	30	4226.624	V I	8	3	4223.99	Lu	2	-
4229.687	V I	12	6	4226.60	U	1	2	4223.963	Ba	5	3
4229.66	Yb	3	-	4226.570	Ge I	200	50	4223.918	Mo	5	4
4229.632	Ce	2	-	4226.549	Mo	10	5	4223.884	Ce II	20	1
4229.63	Dy	5 h	-	4226.527	Os	12	6	4223.88	Br	-	[80]
4229.59	N	-	[5]	4226.44	Tb	50	-	4223.82	Tb	3	-
4229.59	In II	-	[5]	4226.43	Cl I	-	[10]	4223.72	Er	9	2
4229.525	Mo	4	4	4226.430	Fe I	80	25	4223.711	Sm II	50	20
4229.515	Nd	10	2	4226.37	Se II	-	[20]	4223.69	Pt II	-	3
4229.49	Ho	6	3	4226.343	W	10	3	4223.648	U	6	1
4229.459	Th	10	8	4226.335	Ce	2	-	4223.64	Ho	-	2
4229.333	Eu	10	3	4226.291	Mo	20	20	4223.57	In	-	5
4229.309	Ru I	40	-	4226.247	Cb	4	3	4223.51	Pr	12	3
4229.268	U	6	1	4226.209	Cb	3 w	5	4223.47	Ho	4	-
4229.22	Yt I	2	-	4226.205	Ir	2	-	4223.470	Cr I	15	-
4229.21	Kr	-	[8 whl]	4226.196	Ce	3	-	4223.38	Dy	2	-
4229.149	Cb	50	100	4226.175	Sm	5	2	4223.34	Sb II	-	4
4229.118	W	1	2	4226.15	Tb	3	-	4223.327	I	-	[15]
4229.10	Pr	15 w	2	4226.15	Br	-	[4]	4223.32	Tb	10	1
4229.0	bh Pb	4	-	4226.1	B	4	2	4223.30	U	1 h	3
4228.947	Ce	2	-	4226.1	Rb	-	[8]	4223.208	Nd	15	3
4228.837	Nd	10	3	4226.065	U	6	8	4223.159	Ir	15	2 h
4228.827	Ce	5	-	4226.06	Rn I	-	[50]	4223.153	Ce	3	-
4228.8	Cu	3	-	4225.957	Fe I	80	30	4223.09	Lu	1	4
4228.79	Kr II	-	[20 hl]	4225.87	As II	-	10	4223.056	Sm	3	2
4228.787	Mo	4	4	4225.853	Gd	150	50	4223.05	Ti	-	[25]
4228.759	U	18	12	4225.75	U	1	3	4223.04	N I	-	[25]
4228.608	Ta	25	10	4225.746	Ce	6	8	4223.00	Xe II	-	[200 h]
4228.572	Nd	10	2	4225.70	Te	-	[50]	4222.98	Gd	10	-
4228.55	Tm	2	1	4225.605	K II	-	[40]	4222.98	Pr	125	40
4228.50	Pr	15 w	3 w	4225.58	Sc I	4	2	4222.975	K II	-	[40]
4228.46	Te	-	[50]	4225.556	Nd	3	2	4222.961	Mo	15	10
4228.428	U	10	1	4225.54	I II	-	[15]	4222.94	U	1	2
4228.42	As	-	10	4225.496	Ir	15	2	4222.91	Tb	6 W	-
4228.350	Cs II	-	[35]	4225.465	Fe I	80	20	4222.884	Ce	3	-
4228.297	Ce	15	-	4225.463	Zr I	6	-	4222.8	Na I	3	-
4228.28	C	-	[5]	4225.369	U	8	8	4222.78	O	-	[50]
4228.23	Ca	-	3	4225.327	Pr	50	40	4222.739	U	6	-
4228.200	Nd	15	6	4225.318	Sm II	40	30	4222.732	Cr I	100	15
4228.18	A	-	[40]	4225.264	Gd	3	-	4222.71	Tb	9	-
4228.082	Hf	8	2	4225.263	Zr I	4	-	4222.67	A	-	[20]
4228.04	Eu	3 w	-	4225.248	Mo	5	3	4222.67	Tm	10	4
				4225.225	V II	3	10	4222.599	Ce	80	18
				4225.153	Dy	40	8	4222.411	Mo	20	15

4222.4—4212.7 A.

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities			
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
4222.40	Br	-	[4]		Bl	4219.395	Mo	15	12	-	-	4215.98	Pr	4	3	-	-
4222.375	U	18	8	-	-	4219.378	W	25	15	-	-	4215.970	Fe I	2	1	-	-
4222.31	Eu	5	-	-	-	4219.364	Fe I	250	200	-	-	4215.964	Er	9	-	-	Ed
4222.26	Ho	3	1 h	-	Ex	4219.302	Sm	5	1	-	-	4215.95	Tb	3	-	-	Du
4222.221	Dy	10	-	-	-	4219.21	Br	-	[4]	-	Bl	4215.92	N I	-	[5]	-	-
4222.221	Fe I	200	200	-	-	4219.18	I II	-	[10]	-	Ke	4215.90	In	-	5	3	Sq
4222.20	Kr II	-	[20 hl]	-	Me	4219.17	Tb	12	-	-	-	4215.753	Zr II	-	-	3	-
4222.15	P	300	[150 w]	-	Gu	4219.070	Sb II	-	30	-	-	4215.64	Cl	-	-	[6]	Bl
4222.15	U	1	3 h	-	-	4219.015	Mo	8	10	-	-	4215.60	Xe II	-	-	[100]	Hu
4222.058	Nd	5	2	-	-	4218.842	Ir	3	-	-	-	4215.556	Rb I	1000 R	300	-	Rr
4222.055	W	15	8	-	-	4218.84	Hf II	3	-	-	Me	4215.53	Tm	10	-	-	-
4222.02	Tb	3	-	-	-	4218.84	Tb	5	-	-	-	4215.524	Sr II	300 r	400 W	-	ISn
4221.95	Tm	2	2	-	-	4218.72	In II	-	[5]	-	Ps	4215.51	U	3	2	-	-
4221.9	bh Ca	5	-	-	L	4218.710	V I	15	8	-	-	4215.506	Re	20	-	-	-
4221.877	Sc I	10	-	-	-	4218.69	A	-	[20]	-	Rt	4215.425	Fe I	60	15	-	-
4221.859	Sm II	4	2	-	-	4218.69	Yb	15	-	-	-	4215.4	Na I	3	-	-	Fo
4221.805	U	12	8	-	-	4218.634	Sm	6	1	-	-	4215.382	W	12	5	-	-
4221.76	Hf	2	-	-	-	4218.58	Dy	6	-	-	Kn	4215.313	Zr I	4	1	-	-
4221.731	Ce	2	-	-	-	4218.567	Yb	3	50	-	-	4215.169	Dy	50	8	-	-
4221.722	W	6	1	-	-	4218.557	W	12	2	-	-	4215.155	Os	8	1	-	-
4221.715	Nd	8	2	-	-	4218.548	Nd	10	4	-	-	4215.14	Pr	8	3	-	-
4221.696	Ni I	5	-	-	-	4218.545	Th	8	8	-	-	4215.13	Tb	30 d	1 h	-	-
4221.629	Ce	4	-	-	-	4218.520	Cb	-	10 h	-	-	4215.024	Gd	200	150	-	-
4221.58	Se II	-	[20]	-	Bt	4218.464	U	8	3	-	-	4215.02	Se	-	[150]	-	Bt
4221.572	Cr	80	35	-	-	4218.448	Zr I	15	-	-	-	4215.013	U	4	4	-	-
4221.486	Ce	2	-	-	-	4218.426	Er	12	-	-	-	4214.959	W	5	1	-	-
4221.45	Pr	4	1	-	-	4218.289	Ir	20	2	-	-	4214.874	Co	2	1	-	-
4221.38	Tb	3	-	-	-	4218.258	Sc I	4	-	-	-	4214.817	Cb	5	10	-	-
4221.23	As	-	5	-	Ro	4218.190	Th	8	8	-	-	4214.733	Cb	40	-	-	-
4221.171	Ce	12	1	-	-	4218.13	U	3	1	-	-	4214.73	N I	-	[25]	-	Du
4221.138	Nd	15	8	-	-	4218.094	Er	15	1	-	-	4214.698	Ce	4	-	-	-
4221.119	Cs II	-	[15]	-	Sv	4218.091	Dy	50	8	-	Kn	4214.69	Xe II	-	[3]	-	Hu
4221.104	Dy	60	8	-	Kn	4218.085	Ir	8	-	-	-	4214.672	Cb	-	100	-	-
4221.084	Re I	100	2	-	-	4218.07	Ho	3	2	-	Ex	4214.603	Nd	10	10	-	-
4221.080	Eu	10	2	-	-	4218.002	Ce	3	-	-	-	4214.557	Ru	7	-	-	-
4221.07	Ho	4	2	-	Ex	4218.001	Rh I	2	1	-	-	4214.552	Th	-	3	-	-
4221.04	V I	2	2 h	-	Me	4217.945	Cb	50	50	-	-	4214.524	Ir	5	-	-	-
4220.993	Er	18	1	-	-	4217.91	Tb	5	-	-	-	4214.478	Pr	3	2	-	Kn
4220.958	I	-	[80]	-	Ke	4217.9	F	-	[2 h]	-	Di	4214.442	Ru	100	40	-	-
4220.92	Ne II	-	[15]	-	Bn	4217.88	Kr II	-	[2]	-	Me	4214.421	U	10	10	-	-
4220.83	Bi	12	2	-	To	4217.81	Pr	12	8	-	-	4214.42	Tb	25	2	-	-
4220.81	Br	-	[4]	-	Bl	4217.790	Yt I	10	4	-	-	4214.38	Dy	3	-	-	Kn
4220.800	Ir	30	2	-	-	4217.779	Eu	6	1 h	-	-	4214.285	U	10	2	-	-
4220.79	N	-	[5]	-	Du	4217.770	U	10	1	-	-	4214.227	Nd	10	8	-	-
4220.769	Ce	6	-	-	-	4217.760	Ir	40	3	-	-	4214.065	Mo	20	15	-	-
4220.701	U	4	4	-	-	4217.626	Cr I	150	70	-	-	4214.039	Ce I, II	35	4	-	-
4220.675	Eu	2	-	-	-	4217.591	Ce	25	3	-	-	4214.004	Th	-	3	-	-
4220.675	Ru I	60	-	-	-	4217.555	Fe I	200	100	-	-	4213.96	Pr	12	3	-	-
4220.653	Sm II	100	100	-	-	4217.554	La II	200	100	-	-	4213.924	Sm	10	3	-	-
4220.646	Zr I	9	-	-	-	4217.517	U	1	5	-	-	4213.912	Eu	2 l	-	-	-
4220.637	Yt I	15	7	-	-	4217.45	A	-	[10]	-	Rt	4213.879	U	20	4	-	-
4220.610	Mn	60	20	-	-	4217.282	Nd	20	3	-	-	4213.865	Zr I	40	3	-	-
4220.586	Cb	2	8	-	-	4217.27	Eu	4	-	-	-	4213.859	Os	30	3	-	-
4220.549	Ce	3	-	-	-	4217.268	Ru I	100	20	-	-	4213.73	In II	-	[15]	-	Ps
4220.541	W	5	1	-	-	4217.258	Zr I	5 h	-	-	-	4213.72	Xe II	-	[200 h]	-	Hu
4220.541	Sm	3	1	-	-	4217.23	S II	-	[30]	-	Hn	4213.650	Fe	100	60	-	S
4220.47	Tb	2	-	-	-	4217.226	Ce	5	-	-	-	4213.58	In II	-	[10]	-	Ps
4220.42	Te	-	[100]	-	Bl	4217.225	Th	8	5	-	-	4213.573	Pr	18	10	-	-
4220.348	Fe	80	40	-	-	4217.195	Gd	100	100	-	-	4213.546	Yt I	4	2	-	-
4220.3	Na I	10	-	-	Fl	4217.19	Pr	5	1	-	-	4213.54	Eu	3	2	-	-
4220.27	W	7	2	-	-	4217.17	Tb	3	-	-	m	4213.49	Tb	8 d	2 h	-	-
4220.27	Co	2	1	-	m	4217.15	Ne II	-	[30]	-	Bl	4213.285	Ir	3	2	-	-
4220.258	Nd	10 d	5 d	-	-	4217.118	U	1	3	-	-	4213.26	Pr	4	2	-	-
4220.185	Ce	3	-	-	-	4217.09	O	-	[30]	-	Ps	4213.26	Tm	3	-	-	-
4220.151	Sm II	12	10	-	-	4217.08	I I	-	[3]	-	Db	4213.210	Nd	10	-	-	-
4220.14	Pr	10	2	-	-	4216.96	Dy	3	-	-	Kn	4213.182	Dy	5	8	-	Kn
4220.116	U	3	4	-	-	4216.85	Cl	-	[8]	-	Bl	4213.179	Cr	60	-	-	-
4220.11	Tb	15	1 h	-	m	4216.841	Mo	10	8	-	-	4213.167	Ca	-	5	-	-
4220.083	Th	8	8	-	-	4216.816	U	1	2	-	-	4213.15	Ho	3	1	-	Ex
4220.042	V II	3	10	-	-	4216.773	Pr	3	-	-	-	4213.129	Cs II	-	[30]	-	Sv
4219.989	Mo	5	5	-	-	4216.725	Hg	-	[50 h]	-	St	4213.10	In II	-	[50]	-	Ps
4219.976	U	12	2 h	-	-	4216.72	Yb	2	10	-	-	4213.073	Th	10 w	5 w	-	Fd
4219.83	In II	-	[50]	-	Ps	4216.68	Tb	10	1 h	-	-	4213.057	Nd	2	-	-	-
4219.76	Ne II	-	[100]	-	Bn	4216.61	U	8	1	-	-	4213.036	Ce II	15	2	-	-
4219.729	Sc I	8	-	-	-	4216.584	Ir	8	-	-	-	4213.031	Sm II	2	-	-	-
4219.716	U	12	8	-	-	4216.56	P II	-	[15]	-	Gu	4213.027	Yt I	5	4	-	-
4219.704	Ce	6	8	-	-	4216.549	La I	10	-	-	-	4212.991	U	5	5	-	-
4219.652	Pr	30 w	8 w	-	-	4216.365	Cr I	60	25	-	-	4212.97	In II	-	[15]	-	Ps
4219.568	Nd	8	4	-	-	4216.228	Cb	1	10	-	Me	4212.950	Pd I	500 W	300 W	-	-
4219.516	Cs	-	[5]	-	Sv	4216.186	Fe I	200	100	-	S	4212.931	Sm	-	2	-	-
4219.508	U	1	3	-	-	4216.101	Sc I	3	-	-	-	4212.90	C	-	[5]	-	Jn
4219.50	In II	-	[30]	-	Ps	4216.06	W	1	5	-	-	4212.89	W	8	2	-	-
4219.401	U	4	3	-	-	4216.04	Ba II	-	[25]	-	Rs	4212.86	Tm	20	4	-	-
4219.40	In II	-	[5]	-	Ps	4216.0	bh C	-	-	-	L	4212.746	Nd	2	1	-	-
4219.395	Ce	6	-	-	-	4215.99	U	5	3 h	-	-	4212.730	U	5	4 h	-	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
4212.70	Pr	5	2	-	4209.368	Cr	100	40	-	4205.361	Sm	8	4	-
4212.68	Ag I	150 h	20 h	Bx	4209.198	Ce	4	-	-	4205.311	Cb	15	15	-
4212.66	Si	-	-	Sy	4209.116	Nd	5	5	-	4205.255	Nd	5	4	-
4212.660	Cr I	80	8	-	4209.11	Eu	20	-	Kn	4205.23	Tb	2	-	-
4212.625	Zr I	15	-	-	4208.983	Zr II	30	25	-	4205.222	Os	9	1	-
4212.58	Se II	-	[200]	Bl	4208.98	I I	-	[10]	Mu	4205.217	In II	-	[15]	Ps
4212.54	Tb	5	-	-	4208.93	Eu	5	-	Kn	4205.194	Sc I	10	1	-
4212.534	Cb	2	3	-	4208.893	Th	15	15	-	4205.161	Ce	6	2 h	-
4212.53	Hg II	-	[50]	Ps	4208.775	Mo	5	5	-	4205.151	In II	-	[30]	Ps
4212.489	Sc I	4	-	-	4208.70	Tb	15 d	1 h	-	4205.1	bh Ca	6	-	L
4212.477	U	5	3	-	4208.699	Ce	2	-	-	4205.086	V II	5	20	-
4212.4	Na I	3	2	Fo	4208.615	Fe	100	50	-	4205.079	In II	-	[50]	Ps
4212.391	Ce	1	-	-	4208.48	Xe II	-	[200 h]	Hu	4205.07	Cl II	-	[10]	Ks
4212.36	C	-	[5]	Jn	4208.440	Ta	2	30 h	-	4205.046	Eu II	200 R	50	Kn
4212.34	Sc I	3	-	m	4208.439	Ce	6	-	-	4205.03	Dy	7	2	Kn
4212.262	U	12	10	-	4208.380	Nd	8	5	-	4204.909	Eu	5	-	Kn
4212.23	Tb	3 w	-	-	4208.357	Cr	100	25	-	4204.839	Gd	25	-	Kn
4212.22	Hg	-	[30]	Ps	4208.305	Pr	18	12	-	4204.813	Sm II	8	10	-
4212.158	Zr I	3	-	-	4208.245	Ce	4	-	-	4204.809	Mo	25	20	-
4212.063	Ru I	125	80	-	4208.16	Eu	10	1	-	4204.739	Ce	15	-	-
4212.040	Cb	4	3	-	4208.160	Cb	4	4	-	4204.696	Yt II	15	15	-
4212.019	Gd	150	50	-	4208.089	Zr I	5	-	-	4204.623	Ca	-	2	-
4211.906	Ce	1	2	-	4208.064	Gd	5	-	Kn	4204.609	Mo	15	10	-
4211.875	Zr II	18	15	-	4208.03	Cl II	-	[30]	Ks	4204.58	Pr	5	1	-
4211.861	Cu II	1 h	6	Sh	4208.00	As II	-	30	Ro	4204.560	Os	12	-	-
4211.858	Pr	50 d	25 d	Kn	4207.87	F II	-	[3]	Di	4204.54	Cl II	-	[18]	Ks
4211.855	Os	150	50	-	4207.810	Pr	12	5	Kn	4204.538	Sc I	4	2 h	-
4211.83	Se II	-	[200]	Bt	4207.68	Dy	5	-	Kn	4204.53	Re	25 w	-	-
4211.748	Mn	30	20	-	4207.636	Ru	20	-	-	4204.471	Cr	80	30	-
4211.73	Ho	5	3	Ex	4207.617	La II	5	3 h	-	4204.409	W	20	10	-
4211.728	Ti I	30	6	-	4207.615	Co I	2 h	-	-	4204.4	Ti	-	[2]	Cx
4211.72	Tb	25	2	-	4207.577	Ce	2	-	-	4204.371	U	15	10	-
4211.719	Dy	200	15	Kn	4207.561	Mo	10	5	-	4204.351	Nd	10 d	3 d	-
4211.718	Er	30	5	-	4207.56	Tb	8	-	-	4204.321	Cb	4	3	-
4211.68	U	10	10	-	4207.442	F II	-	[30]	Di	4204.31	Kr	-	[3 whl]	Me
4211.641	Ca	-	2	-	4207.401	Mo	10	5	-	4204.296	Ce	1	3	-
4211.620	U	18	-	-	4207.40	Hf II	-	4	-	4204.200	V II	2	6	-
4211.582	Ce	3	-	-	4207.276	Ca	-	10	-	4204.198	Cr I	50	6	-
4211.519	Th	8	8	-	4207.249	Mo	10	10	-	4204.038	La II	200	25	-
4211.349	Cr	100	30	-	4207.23	U	4	1 h	-	4203.987	Fe I	200	120	S
4211.335	Zr I	12	-	-	4207.162	F II	-	[50]	Di	4203.820	W	15	6	-
4211.32	Te	-	[15]	Bl	4207.131	Fe I	80	40	-	4203.73	Tm	250	25	Me
4211.310	U	10	6	-	4207.053	W	25	12	-	4203.71	Tb	25	1	-
4211.286	Nd	30	15	-	4206.899	Cr	80	25	-	4203.695	Xe I	100	[50]	IHu
4211.248	Dy	4	-	-	4206.832	Ce	8	-	-	4203.590	Cr I	-	20	-
4211.24	Pr	5	2	-	4206.80	Tb	5	-	Ed	4203.572	Fe I	10	1	-
4211.24	Ho	3	1 h	Ex	4206.78	Gd	4 h	-	-	4203.505	Ce	6	2 h	-
4211.2	bh Sr	3	-	L	4206.739	Pr	50	50	-	4203.49	Pr	4	2	-
4211.16	Tb	2	1 h	-	4206.702	Fe I	125	25	-	4203.464	Ti I	50	10	-
4211.141	Rh I	15	200	-	4206.68	V I	2	2 h	Me	4203.434	Nd	10 d	8	-
4211.024	Mo	15	12	-	4206.619	Sm II	10	10	-	4203.43	A	-	[20]	Rt
4210.978	Nd	25	5 h	-	4206.617	Rh I	8	5	-	4203.413	Cb	4	3	-
4210.936	Ag I	200 h	30 h	-	4206.577	Hf II	10	10 h	-	4203.330	Ce	10 h	-	-
4210.920	Th	8	3	-	4206.544	Dy	12	4	Kn	4203.323	Re	10	-	-
4210.873	U	12	12	-	4206.53	Se	-	[10]	Bl	4203.270	Ne I	-	[2]	Ps
4210.768	Th	3	1	Fd	4206.49	Tb	20 d	1 h	-	4203.23	Rn	-	[200]	Rc
4210.751	Cr	12	-	-	4206.43	Ne II	-	[15]	Bl	4203.22	Ca I	2	-	Cw
4210.67	Eu	2	1	-	4206.409	U	10	10	-	4203.22	Xe II	-	[3]	Hu
4210.67	Kr	-	[25 whl]	Me	4206.404	Ta	50	20	-	4203.174	Ce	2	-	-
4210.611	Zr II	3	3	-	4206.324	Ce	3	-	-	4203.12	Mo	4	2	-
4210.587	Ir	3 wh	2 wh	-	4206.296	U	5	5	-	4203.094	U	6	4	-
4210.448	U	10	15	-	4206.240	W	6	2	-	4203.07	Tb	3	-	-
4210.352	Fe I	300	200	-	4206.132	Cb	4	3	-	4203.047	Sm II	15	20	-
4210.340	Sm II	50	20	-	4206.124	Sm II	20	20	-	4202.944	Ce II	40	18	-
4210.30	Yb	4	-	Me	4206.10	Hg	-	[30]	Ps	4202.912	Sm II	15	8	-
4210.240	Ce	3	-	-	4206.07	Br	-	[2]	Bl	4202.88	Br	-	[4]	Bl
4210.22	La	-	10 h	Me	4206.016	Ru I	100	40	-	4202.758	Fe	10	4	-
4210.209	Mo	5	5	-	4206.00	Tm	20	5	-	4202.709	Ce	2	-	-
4209.997	Ce	6	2 h	-	4205.92	Er	6	-	-	4202.70	Pr	8	3	-
4209.857	V I	30	10	-	4205.919	Zr II	10	3	-	4202.68	Eu	15	-	-
4209.804	Nd	5	4	-	4205.892	Ce	4	1 h	-	4202.676	U	6	2	-
4209.80	V II	-	12	Me	4205.876	Ta	100	30	-	4202.522	Sr I	6	-	ISn
4209.788	W	3	1	-	4205.809	Mo	2	1	-	4202.516	Ir	8	-	-
4209.756	Cr	80	20	-	4205.792	Ce	4	-	-	4202.512	Gd	15	-	-
4209.739	V	-	12	Me	4205.773	Sm	4	2	-	4202.50	Br	-	[25]	Ks
4209.71	As II	-	10	Ro	4205.72	Pr	5	1	-	4202.426	Ir	8	-	-
4209.70	Hf	5	2	m	4205.65	N	-	[5 h]	Du	4202.41	Pr	3	2	-
4209.67	Cl I	-	[8]	Ks	4205.64	Tb	3	-	-	4202.4	Al II	-	[8]	Sy
4209.67	Sb II	-	[10]	Lg	4205.64	Dy	5	2	Ed	4202.34	V II	6	15	Me
4209.649	Mo	4	80	-	4205.63	U	3	-	-	4202.250	Dy	20	4	-
4209.498	K II	-	[15]	Dm	4205.595	Nd	20	15	-	4202.24	P	-	[30 h]	Gu
4209.492	U	15	1	-	4205.559	W	7	12	-	4202.219	Mo	5	5	-
4209.47	Xe II	-	[100 h]	Hu	4205.546	Fe I	50	6	-	4202.154	Ni I	5	-	-
4209.41	Tb	2 h	-	Ed	4205.404	Xe I	-	[10]	IMe	4202.062	Os	100	4	-
4209.409	Ce	25	3 l	-	4205.4	Ti	-	[2]	Cx	4202.031	Fe I	400	300	S

4202.0—4192.3 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4202.03	Eu	5	-	-	4198.61	Mo	4	4	-	4195.169	Sb II	-	50	-
4201.97	A	-	[20]	Rt	4198.525	Cr	100	30	-	4195.144	Os	100 s	1	-
4201.97	Ta	5 h	-	Ks	4198.510	Cb	3	5	-	4195.11	Cl II	-	[18]	Ks
4201.852	Th	8	10	-	4198.503	Ir	10	-	-	4195.094	Cb	20	20	-
4201.851	Rb I	2000 R	500	Rr	4198.432	Ce II	5	1	-	4195.030	U	3	3	-
4201.768	Ca	-	2	-	4198.425	Co I	3 h	-	-	4195.029	Nd	15	10	-
4201.757	Mn	40	20	-	4198.42	Tb	7	-	-	4194.951	Cr	70	25	-
4201.723	Ni I	30	-	-	4198.367	Cb	2	5 h	-	4194.906	Ce	8 s	2	-
4201.628	U	1	2	-	4198.317	A I	-	[1200]	I	4194.88	Ho	3	2 h	Ex
4201.60	Er	8 d	-	-	4198.312	Fe I	250	150	-	4194.845	Er	18	1	-
4201.58	A II	-	[2]	Rt	4198.3	Na I	10	-	Fl	4194.832	Ce	3	-	-
4201.529	Pr	30 w	12 w	-	4198.25	Si	-	3	Sy	4194.827	Dy	50	12	Kn
4201.519	Cb	10	-	-	4198.241	U	10	3	-	4194.82	Tb	25	1 h	-
4201.50	La	2	12 h	Me	4198.168	Nd	-	4	-	4194.82	B II	-	2	En
4201.457	Zr I	50	3	-	4198.099	Ne I	-	[70]	Ps	4194.762	Zr I	25	1	-
4201.449	Os	30	3	-	4198.05	Se II	-	[40]	Bl	4194.670	Re I	40	-	-
4201.42	Kr II	-	[30 wh]	Me	4198.026	Dy	20	4	-	4194.62	Pr	15	5	-
4201.416	U	8	8	-	4197.998	Ce I, II	2	2	-	4194.561	Mo	30	30	-
4201.372	Dy	8	4	Kn	4197.93	Dy	4	-	-	4194.55	Se II	-	[50]	Bl
4201.35	Br	-	[5]	Bl	4197.869	Sm II	2	2	-	4194.474	Eu	10	-	-
4201.318	Dy	30 w	-	-	4197.81	Xe II	-	[5 wh]	Hu	4194.450	Zr I	8	1	-
4201.318	Mo	5	5	-	4197.762	Zr I	3	-	-	4194.354	La II	15	15	-
4201.300	Ce	4	20	-	4197.696	Gd	40	50	-	4194.344	Co	5	-	-
4201.25	Xe II	-	[8 wh]	Hu	4197.669	Ce II	6	3	-	4194.34	Ho	30	15	Kn
4201.239	Ce	8 l	3	-	4197.63	Tm	3	-	-	4194.24	Pr	10	3	-
4201.216	Pt I	2	2	-	4197.613	Cb	2	5	-	4194.229	Ca	-	3	-
4201.184	Pr	15	10	-	4197.61	As II	-	30	Ro	4194.127	U	4	1	-
4201.178	Mo	4	3	-	4197.601	V I	12	7	-	4194.108	Ce	4	-	-
4201.14	Tm	4	5	Me	4197.579	Ru I	100	100	-	4194.09	Ra II	-	[80]	Ra
4201.131	U	4	4	-	4197.536	Ir	40	2	-	4194.009	Mo	5	3	-
4201.01	Dy	5	-	Kn	4197.518	U	8	8	-	4194.007	Zr I	8	-	-
4200.99	Tb	40	4	-	4197.511	Ce II	6	1	-	4194.00	Tb	5	-	-
4200.927	Fe I	80	20	-	4197.415	U	6	4	-	4193.972	W	8	2	-
4200.81	Eu	2	-	Kn	4197.393	Mo	3	3	-	4193.88	Mo	5	3	-
4200.749	Ti I	35	8	-	4197.234	Cr	70	25	-	4193.88	Pr	5	2	-
4200.694	Ce	-	2 h	-	4197.22	Te	-	[15]	Bl	4193.874	Ce II	35	5	-
4200.675	A I	-	[1200]	I	4197.160	U	8	6	-	4193.856	U	2	3	-
4200.66	Tb	4	-	-	4197.1	bh C	-	-	L	4193.84	Dy	3	-	Ed
4200.64	Er	9 d	1	-	4197.075	Er	12 w	1	-	4193.828	Cb	5	-	Me
4200.570	Mo	15	15	-	4197.054	Gd	10	10	-	4193.800	Cb	-	15	-
4200.52	Pr	4	1	-	4197.05	Mo	3	3	-	4193.76	Tb	6 w	1 h	-
4200.486	Sb II	-	2 wh	-	4197.03	Tb	2	1 h	m	4193.662	Cr	100	25	-
4200.464	Ni I	40	-	-	4196.99	In	-	10	Sq	4193.612	Rb II	-	2	Rr
4200.199	Mo	4	2	-	4196.950	Cb	3	5	-	4193.608	U	3	1	-
4200.191	V I	10	5	-	4196.871	Ru	60	50	-	4193.529	Xe I	-	[150]	IMe
4200.139	Ce	3	1	-	4196.79	Pr	10	4	-	4193.51	S II	-	[15]	Hn
4200.12	Tb	2	-	-	4196.73	Tb	15	1 h	-	4193.49	N	-	[10]	Du
4200.103	Cr	80	8	-	4196.706	U	12	1	-	4193.467	Rb II	-	2	Rr
4200.098	U	6	8	-	4196.60	Ca	12 w	1 h	Ad	4193.46	Br II	-	[25]	Bl
4200.031	Nd	6	4	-	4196.573	Ce	4	4	-	4193.44	Mg II	2	-	Fl
4200.028	W	12	3	-	4196.547	La II	200	150	-	4193.425	U	4	2 h	-
4199.93	A II	-	[5]	Rt	4196.533	Fe	3	-	-	4193.42	P II	-	[5 h]	Gu
4199.92	Tm	100	20	-	4196.504	Rh I	100	50	-	4193.371	La II	15	10	-
4199.918	Er	8	-	-	4196.415	Ne I	-	[15]	Ps	4193.33	Tb	5	-	-
4199.902	Ru I	150	300	-	4196.335	Ce II	20	3	-	4193.32	Se	-	[20]	Bt
4199.85	He II	-	[2]	Ps	4196.24	Se II	-	[20]	Bl	4193.283	Ce	18	3	-
4199.830	Mo	5	5	-	4196.214	Fe I	100	50	-	4193.198	Cs	-	[8]	Sv
4199.67	Tb	3	-	-	4196.188	Eu	7	3	-	4193.158	Gd	25	-	-
4199.667	Ce	3	-	-	4196.133	Zr I	10	-	-	4193.15	Xe	-	[200 h]	Hu
4199.662	Ir	4	-	-	4195.96	Pr	12	5	-	4193.11	Br	-	[5]	Bl
4199.653	Mo	5	5	-	4195.950	Th	8	5	-	4193.097	Ta	8	10 h	-
4199.634	U	6	2	-	4195.834	Th	5	5	-	4193.097	Rb II	-	40	Rr
4199.626	W	9	-	-	4195.817	Ce II	10	-	-	4193.094	Ce	25	4	-
4199.6	P II	-	[5 h]	Gu	4195.804	U	-	2	-	4193.022	Th	2	-	-
4199.58	Pr	3	2	-	4195.755	Re	20	-	-	4193.01	Xe I	-	[20]	Me
4199.488	Sc	3	-	-	4195.657	Cb	5	3	-	4192.905	U	10	1	-
4199.454	Sm II	8	12	-	4195.626	Co	3	-	-	4192.9	Rn	-	[10]	Wa
4199.305	Ir	2	-	-	4195.623	Fe I	25	3	-	4192.837	Ir	25	2	-
4199.272	Yt II	3	10	-	4195.603	V I	10	2	-	4192.836	Co I	3 h	-	-
4199.099	Nd	15	15	-	4195.56	Ra II	-	[4]	Rs	4192.756	Ce II	6	1	-
4199.099	Ca	2	2	-	4195.550	Th	5	8	-	4192.730	La I	10	-	-
4199.099	Fe I	300	200	-	4195.531	Ni I	30	2	-	4192.637	Os	9	1	-
4199.091	Zr I	20	2	-	4195.524	U	-	2	-	4192.62	F II	-	[3]	Di
4199.05	Tb	3	-	-	4195.52	Pr	8 h	3 h	-	4192.6	Na I	3	-	Fo
4199.022	Th	3	5	-	4195.51	Se II	-	[100]	Bt	4192.566	Rb II	-	2	Rr
4199.0	Dy	2	-	Ed	4195.5	Na I	3	-	Fo	4192.564	Eu	8	-	-
4198.99	Tb	4	-	Kn	4195.5	Pb II	-	[3]	Ea	4192.563	Er	7	-	-
4198.91	Mo	1	25	-	4195.40	Eu	2	-	Ed	4192.56	Bi II	-	8	Mi
4198.875	Ru I	60	100	-	4195.398	Gd	8	-	-	4192.549	Cr	6	-	-
4198.847	Cb	4	3	-	4195.37	Se	-	[10]	Bl	4192.53	O II	-	[15]	Mh
4198.724	Ce	8	3	-	4195.347	Eu	10	2	-	4192.51	Fe	2	-	-
4198.69	Er	10 d	2	-	4195.337	Fe I	150	100	-	4192.50	Pr	18	5	-
4198.66	Eu	3	-	-	4195.281	Ce	6	2	-	4192.429	Pt I	100	2	-
4198.643	Fe I	10	2	-	4195.22	Dy	12	-	Kn	4192.410	Er	8	-	-
4198.611	V I	10	6	-	4195.190	U	8	3	-	4192.358	La II	50	50	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities					
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
4192.35	Br	-	[4]	-	BI	4189.4	Dy	6	-	-	Kn	4185.333	Ce II	30	4	-	-
4192.322	U	3	3	-	-	4189.29	Tb	3	-	-	-	4185.154	Pr	5	2	-	-
4192.31	Bi II	-	6	-	MI	4189.277	U	10	10	-	-	4185.12	Kr II	-	[50]	-	Me
4192.29	Mo	-	40	-	-	4189.200	U	3	3	-	-	4184.995	Er	7	-	-	-
4192.190	Os	4	-	-	-	4189.179	Ce II	8	-	-	-	4184.985	Eu	7	-	-	-
4192.177	Mo	4	-	-	-	4189.170	W	5	3	-	-	4184.980	Nd	15	10	-	-
4192.152	Sm II	5	9	-	-	4189.1	bh Sr	4	-	-	L	4184.95	Tb	2	-	-	-
4192.148	U	6	5	-	-	4189.08	P	-	[30 h]	-	Gu	4184.895	Cr	35	10	-	-
4192.103	Cr	40	15	-	-	4188.93	Er	10 d	-	-	-	4184.895	Fe I	100	80	-	S
4192.10	Bi II	-	2	-	MI	4188.892	U	8	-	-	-	4184.66	Tb	2	-	-	Ed
4192.096	Zr I	10	1	-	-	4188.82	Cl II	-	[15]	-	Ks	4184.628	Ce	2	-	-	-
4192.070	Cb	20	20	-	-	4188.691	Ti I	35	8	-	-	4184.50	U	1	3 h	-	-
4192.00	Tb	3	-	-	-	4188.661	Ce	3	-	-	-	4184.475	Ni I	6	-	-	-
4191.938	U	12	2 h	-	-	4188.594	Th	1	3	-	-	4184.473	Kr I	-	[20]	-	IHu
4191.923	Sm	8	15	-	-	4188.51	Tb	20	2 h	-	-	4184.444	Cb	20	50	-	-
4191.891	Re	3 h	-	-	-	4188.384	Ce	51	1 h	-	-	4184.391	Mo	4	4	-	-
4191.829	Th	5	8	-	-	4188.321	Mo	100	80	-	-	4184.379	Ce	3	1	-	-
4191.793	Zr I	8	3	-	-	4188.24	Hf	8	-	-	-	4184.329	Ti II	8	20	-	-
4191.750	Cr I	50	6	-	-	4188.121	Sm II	10	25	-	-	4184.30	Tb	10	2	-	-
4191.680	Fe I	20	6	-	-	4188.10	Tb	15	1 h	-	-	4184.282	Ca	2	81	-	-
4191.627	Dy	40	2	-	Kn	4188.099	Gd	20	-	-	-	4184.264	Gd	150	150	-	-
4191.624	Gd I	40	15	-	-	4188.07	P	-	[30 h]	-	Gu	4184.26	Se II	-	[25]	-	Bt
4191.615	Pr	40	25	-	-	4188.066	U	10	8	-	-	4184.25	Lu	100	200	-	Me
4191.59	Cl II	-	[15]	-	Ks	4187.983	Er	7 wd	-	-	-	4184.242	Pr	4	1	-	-
4191.59	Tb	25 d	-	-	-	4187.967	Ir	8	-	-	-	4184.170	Mo	4	4	-	-
4191.558	V I	15	5	-	-	4187.921	Re I	6	-	-	-	4184.151	U	2	2	-	-
4191.487	Zr II	-	4	-	-	4187.87	U	-	5	-	-	4184.131	Os	25	2	-	-
4191.436	Fe I	200	100	-	-	4187.81	Rn	-	[35]	-	Wa	4184.08	Se	-	[10]	-	Rd
4191.345	Ce	6	4 h	-	-	4187.801	Fe I	200	150	-	-	4184.066	Ce	3	4	-	-
4191.32	Er	6 w	-	-	-	4187.79	Pr	2	2	-	-	4184.063	Er	4	-	-	-
4191.271	Cr I	70	15	-	-	4187.66	Hf II	8	10	-	-	4183.99	Te	-	[30]	-	BI
4191.26	Ta	3	1	-	-	4187.62	Tm	300	30	-	Me	4183.826	W	12	5	-	-
4191.161	Ta	5	2	-	-	4187.609	Mo	3	3	-	-	4183.801	Ce	3	-	-	-
4191.079	Gd	100	-	-	-	4187.589	Fe	3	1	-	-	4183.757	Sm II	10	15	-	-
4191.07	Tb	10	1	-	-	4187.564	Zr I	9	3	-	-	4183.732	Dy	15	8	-	-
4191.031	Ce	8	2	-	-	4187.467	Zr	4	-	-	-	4183.668	W	10	-	-	-
4191.03	Mo	-	30	-	-	4187.323	Ce II	35	15	-	-	4183.619	Gd	35	-	-	-
4191.028	A I	-	[1200]	-	I	4187.316	La I	50	40	-	-	4183.611	Dy	8	-	-	Kn
4190.92	Si	-	4	-	Sy	4187.250	Co I	50	3	-	-	4183.599	U	2	5	-	-
4190.90	Dy	10	2	-	Kn	4187.16	Tb	15	-	-	-	4183.574	Th	8	8	-	-
4190.896	V II	1	4	-	-	4187.044	Fe I	250	200	-	-	4183.434	V II	3	20	-	-
4190.884	Cb	20	30	-	-	4186.977	U	10	4	-	-	4183.385	Cb	-	10 h	-	-
4190.82	Br	-	[8]	-	BI	4186.90	Yb	-	10 h	-	Me	4183.335	Sm	2	2	-	-
4190.785	Gd I	100	40	-	-	4186.860	Ce	2	-	-	-	4183.318	Zr I	40	1	-	-
4190.78	Tb	2	-	-	-	4186.84	Ho	3	3	-	Ex	4183.295	Ti I	20	7	-	-
4190.712	A I	-	[600]	-	I	4186.810	Dy	100 w	12	-	Kn	4183.266	U	10	1	-	-
4190.706	Co I	10 W	5	-	-	4186.790	U	6	5	-	-	4183.207	Ir	40	4	-	-
4190.698	Er	101	-	-	-	4186.777	Zr I	3	-	-	-	4183.19	Eu	4	-	-	-
4190.660	Cr I	12	-	-	-	4186.71	Er	8	2	-	-	4183.163	Ce	6	31	-	-
4190.650	Cb	5	10	-	-	4186.688	Zr II	3	3	-	-	4183.134	Nd	6	2	-	Kr
4190.64	Pr	10	3	-	-	4186.60	Tb	2	-	-	-	4183.06	Mo	4 h	2 h	-	-
4190.626	Ce	30	3	-	-	4186.599	Ce II	80	25	-	-	4183.01	Tb	3	-	-	-
4190.547	Ir	5	-	-	-	4186.477	U	6	5	-	-	4182.979	Re I	150 r	-	-	-
4190.461	Nd	5	3	-	-	4186.42	Eu	6	-	-	Kn	4182.943	U	6	6	-	-
4190.42	Tb	3	-	-	-	4186.395	Pr	12	3	-	-	4182.91	Pr	5	2	-	-
4190.420	Mo	6	3	-	-	4186.359	Cr	50	10	-	-	4182.831	Ru	12	8	-	-
4190.400	V II	2	6	-	-	4186.34	Sb II	-	4	-	Dv	4182.770	Gd	5	-	-	-
4190.395	U	1	2	-	-	4186.311	Nd	25	3	-	-	4182.666	U	2	2	-	-
4190.37	As II	-	10	-	Ro	4186.31	Tm	5	8	-	-	4182.644	Ru I	15	12	-	-
4190.331	Ce	4	-	-	-	4186.281	Mo	15	12	-	-	4182.591	V I	20	7	-	-
4190.30	Yb	7	30	-	m	4186.280	Ir	2	-	-	Ab	4182.513	Nd	8	8	-	-
4190.27	Dy	3	-	-	Ed	4186.24	Tb	10	1 h	-	m	4182.467	Ir	50	6	-	-
4190.15	W	5	-	-	-	4186.226	K II	-	[60]	-	Dm	4182.457	Ru	20	30	-	-
4190.147	Gd	100 W	-	-	-	4186.123	Ti I	100	40	-	-	4182.450	Os	6	-	-	-
4190.131	Cr	40	15	-	-	4186.105	Cb	5	8	-	-	4182.42	Dy	8	4	-	Kn
4190.12	Tb	2	-	-	Ed	4186.037	U	6	1	-	-	4182.386	Fe I	80	30	-	-
4190.005	Mo	20	15	-	-	4186.033	Nd	8	4	-	-	4182.33	Pr	10	5	-	-
4190.0	Ho	-	2 h	-	Ex	4186.02	W	12	2	-	-	4182.324	W	3	-	-	-
4189.992	Yt	4	-	-	-	4185.95	S	-	[15]	-	Hn	4182.292	Nd	8	1 h	-	-
4189.990	Cb	5	10	-	-	4185.89	Tb	8	-	-	-	4182.270	Er	9	-	-	-
4189.988	Mn	80	40	-	-	4185.825	Mo	40	40	-	-	4182.26	Eu	8	1	-	m
4189.984	Er	9	-	-	-	4185.82	Pr	15	5	-	-	4182.20	Se II	-	[4]	-	BI
4189.906	Os	60	3	-	-	4185.780	U	6	6	-	-	4182.161	Pb	-	5 h	-	-
4189.876	Ir I	2	-	-	Ab	4185.766	Nd	15	8 s	-	-	4182.077	V I	10	5	-	-
4189.841	V I	20	10	-	-	4185.724	Er	15 w	-	-	-	4181.99	Th	5	8	-	Ex
4189.793	O II	-	[500]	-	FI	4185.722	Re	2 h	-	-	-	4181.883	A I	-	[1000]	-	IHu
4189.755	Eu	5	1 h	-	-	4185.67	Cb	2	2 h	-	-	4181.757	Fe I	200	150	-	-
4189.71	S II	-	[250]	-	Hn	4185.658	Ir	25	-	-	-	4181.75	Br	-	[8]	-	BI
4189.67	A	-	[10]	-	Rt	4185.61	Cl II	-	[20]	-	Ks	4181.579	Ce	2	-	-	-
4189.640	Ce	8	1	-	-	4185.541	Cb	1	30	-	-	4181.550	U	3	3	-	-
4189.587	Cb	2	5 h	-	-	4185.528	Ce	3	-	-	-	4181.512	Cb	-	2	-	-
4189.564	Fe	3	-	-	-	4185.459	Ru	12	2	-	-	4181.393	W	2	2	-	-
4189.518	Pr	100	50	-	Kn	4185.453	O II	-	[150]	-	FI	4181.345	Ce	-	2	-	-
4189.503	Er	9	-	-	-	4185.44	Tb	3	-	-	-	4181.340	Cb	5	5	-	-
4189.462	Ru I	15	9	-	-	4185.345	Cr	30	3	-	-	4181.33	Tb	10	2 h	-	-

4181.2—4171.9 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities					
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
4181.25	Dy	5	-	-	-	4178.342	Ir	4	-	-	-	4175.223	Ne I	-	-	[60]	Ps
4181.152	Ta	40	25	-	-	4178.283	Ce	1	2	-	-	4175.216	Ir	4	-	-	-
4181.099	Sm II	8	25	-	-	4178.272	Mo	25	20	-	-	4175.21	S	-	-	[5]	Hn
4181.081	Ce	20	3	-	-	4178.153	Ce	3	-	-	-	4175.206	Ta	100	40 h	-	-
4181.049	Mo	25	15	-	-	4178.14	Tb	2	-	-	-	4175.180	Er	4	-	-	-
4180.97	La II	-	10 h	-	Me	4178.084	Ce	3	-	-	-	4175.17	Re	6	-	-	-
4180.95	Hg	-	[100]	-	Ps	4178.072	Dy	12	-	-	Kn	4175.17	Eu	8	2	-	-
4180.94	In	-	15	-	-	4178.064	Th	10	12	-	-	4175.141	U	2	2	-	-
4180.94	Se II	-	[800]	-	Bl	4178.051	Fe	3	1	-	-	4175.124	Mo	12	8	-	-
4180.91	Dy	7	4	-	Ed	4178.025	Hg	-	-	[50 h]	St	4175.08	Tb	5	-	-	m
4180.886	U	5	5	-	-	4178.006	Sm II	3	10	-	-	4174.941	Cr I	10	3	-	-
4180.88	Tb	4	1 h	-	-	4177.98	Ra I	-	-	[10]	Rs	4174.917	Fe I	100	25	-	-
4180.88	Eu	10	1	-	-	4177.919	Ta	20	15	-	-	4174.905	Er	10 d	-	-	-
4180.875	Er	25 w	-	-	-	4177.917	Mo	-	15 h	-	-	4174.795	Cr I	100	40	-	-
4180.868	Ti I	100	20 h	-	-	4177.899	Cr	40 h	1 h	-	-	4174.701	Nd	3	2	-	-
4180.828	Yb	10	100	-	-	4177.89	Pr	12	3	-	-	4174.63	Pr	5	1	-	-
4180.8	bh C	-	-	-	L	4177.867	Cb	-	5	-	-	4174.57	Yb	10	1	-	-
4180.702	U	4	3	-	-	4177.85	Tb	2	-	-	-	4174.475	Ti I	15	3	-	-
4180.69	Ca	-	2	-	Ad	4177.838	U	4	3	-	-	4174.475	Ce	8 l	-	-	-
4180.68	Pr	8	1	-	-	4177.83	Gd	5	-	-	Ed	4174.460	Nd	5	10	-	-
4180.503	Mo	8	4	-	-	4177.830	W	10	3	-	-	4174.432	Sm II	5	10	-	-
4180.501	Ti I	6	-	-	-	4177.758	Cu I	60 w	1	-	Hs	4174.389	Ce II	8	-	-	-
4180.40	Pr	5	2	-	-	4177.754	Dy	6	-	-	Kn	4174.369	Ne I	-	-	[70]	Ps
4180.40	Tb	20	1 h	-	-	4177.635	Rh I	25	5	-	-	4174.342	Cb	3	5	-	-
4180.385	Sm	10	2	-	-	4177.596	Fe I	100	25	-	-	4174.34	Hf	25	6	-	-
4180.33	Dy	2	2	-	Ed	4177.57	Eu	8	2	-	Kn	4174.326	Cr I	3	-	-	-
4180.307	U	12	1 h	-	-	4177.552	Yt II	50	50	-	-	4174.32	Tb	6	-	-	-
4180.28	Er	6 d	2	-	-	4177.505	Hf II	5	8	-	-	4174.300	S	-	-	[150]	Hn
4180.239	W	10	5	-	-	4177.50	Pr	4	2	-	-	4174.194	U	12	12	-	-
4180.2	Na I	3	-	-	Fo	4177.486	La I	15	-	-	-	4174.133	Yt I	100	8	-	-
4180.10	Xe II	-	[500 h]	-	Hu	4177.46	Ti II	-	-	[8]	-	4174.091	Ti I	15 h	12 h	-	-
4180.02	Tm	5	2	-	-	4177.4	Na I	3	-	-	El	4174.080	Mo	12	10	-	-
4179.965	Th	8	8	-	-	4177.390	S	2	5	-	-	4174.042	S II	-	-	[50]	Hn
4179.959	Cr	25	1	-	-	4177.358	Ir	5	-	-	-	4174.014	V I	12	7	-	-
4179.936	Mo	8	5	-	-	4177.357	Ti I	10	2	-	-	4173.987	Re	20	-	-	-
4179.93	Ac	-	60	-	Lx	4177.349	Ce	2	3 l	-	-	4173.966	Ne I	-	-	[2]	Ps
4179.885	Ti I	4	-	-	-	4177.321	Nd	15	25	-	-	4173.953	Cb	5	15	-	-
4179.809	Zr II	15	8	-	-	4177.257	Mo	20	20	-	-	4173.952	Ce	3	-	-	-
4179.806	Ce	1	2	-	-	4177.072	V I	15	3	-	-	4173.926	Fe I	50	5	-	-
4179.80	Tb	6	1	-	-	4177.02	Kr	-	-	[3 hs]	Me	4173.795	I II	-	-	[30]	Ke
4179.755	Cb	10	20	-	-	4176.986	Ta	15	40	-	-	4173.792	U	3	3	-	-
4179.75	Re	2 h	-	-	-	4176.910	U	3	3	-	-	4173.75	Eu	8	-	-	-
4179.74	Ca	-	2	-	Ad	4176.90	Re	5	-	-	-	4173.70	Pr	5	2	-	-
4179.718	Th	8	8	-	-	4176.900	Mo	10	10	-	-	4173.682	Re	2	-	-	-
4179.68	N II	-	[2 h]	-	Fl	4176.86	Tb	4	-	-	-	4173.669	U	6	1	-	-
4179.64	Br	-	[40]	-	Bl	4176.795	V I	5	2	-	-	4173.660	Ce	-	-	2 h	-
4179.634	U	2	1	-	-	4176.75	Ti II	-	-	[2]	El	4173.561	Gd	30	30	-	-
4179.585	Nd	10	10	-	-	4176.725	Eu	5	-	-	-	4173.549	Ti II	12	40	-	-
4179.58	Kr II	-	[20 whl]	-	Me	4176.703	Ce	18	2	-	-	4173.533	Cs	-	-	[15]	Sv
4179.53	Hf II	5	8	-	-	4176.686	Cr	15	2	-	-	4173.475	Fe II	8	8	-	RI
4179.508	Cu II	1 h	6	-	-	4176.64	Dy	3	-	-	Kn	4173.46	Tb	15	2	-	-
4179.46	Dy	3	-	-	Ed	4176.62	Eu	8	2	-	Kn	4173.379	Nd	12	2	-	-
4179.459	Cr	-	8	-	-	4176.602	Mn	100	40	-	-	4173.34	Yt	8	-	-	Me
4179.432	U	10	1	-	-	4176.572	Fe I	100	50	-	-	4173.323	Fe I	25	5	-	-
4179.422	Pr	200	40	-	-	4176.56	Re I	12 w	-	-	-	4173.234	Os	100	6	-	-
4179.419	V I	20	10	-	-	4176.53	A	-	-	[20]	Ms	4173.23	Ho	50	-	-	Kn
4179.401	Er	5	-	-	-	4176.33	Pr	5	2	-	-	4173.143	Ce	2	-	-	-
4179.40	Eu	2	1 h	-	-	4176.32	Er	10 d	-	-	-	4173.128	Zr I	3	1	-	-
4179.372	Ba	6	-	-	-	4176.183	Ir	10	2	-	-	4172.974	U	10	15	-	-
4179.31	A	-	[20]	-	Rt	4176.17	N	-	-	[10 h]	Fl	4172.885	Ce	2	2	-	-
4179.289	Ce II	10	1	-	-	4176.169	Cb	2	-	-	-	4172.83	Kr I	-	-	[3]	Me
4179.257	Cr	100	40	-	-	4176.080	Ce II	12	-	-	-	4172.82	Tb	10	-	-	-
4179.24	Te	-	[70]	-	Bl	4175.945	Cr	40	10	-	-	4172.80	Eu	12	3	-	Kn
4179.229	Co I	15	2	-	-	4175.945	Ce	6	1	-	-	4172.79	P II	-	-	[5]	Gu
4179.079	Ce	8	-	-	-	4175.943	U	-	3	-	-	4172.769	Cr	35	15	-	-
4179.062	V	-	2	-	Me	4175.864	Ir	3	-	-	Ab	4172.751	Mo	3	2	-	-
4179.041	Ge	-	25 wh	-	-	4175.86	Tb	6	-	-	-	4172.750	Fe I	60	10	-	-
4179.001	U	15	12	-	-	4175.79	Br I	-	-	[50]	Ks	4172.652	Fe I	3	1	-	-
4178.97	Tb	50 d	2 h	-	m	4175.644	Pr	20	10	-	-	4172.621	Ce	2	-	-	-
4178.868	Fe II	10	10	-	Fl	4175.64	Hg	-	-	[20]	-	4172.609	Ti I	5	-	-	-
4178.641	Pr	18	10	-	-	4175.640	Fe I	100	80	-	S	4172.59	Tb	12	2	-	-
4178.639	Nd	10	6	-	-	4175.639	Ca	-	5	-	-	4172.57	Os	60	3	-	-
4178.602	Er	8 s	-	-	-	4175.627	Os	100	4	-	-	4172.559	Ir I	150	12	-	-
4178.597	Re	3	-	-	-	4175.606	Nd	40	10	-	-	4172.51	Kr II	-	-	[20 hl]	Me
4178.59	Dy	8	2	-	Ed	4175.59	W II	7	25	-	-	4172.316	La I	8	-	-	-
4178.56	Tb	2	-	-	-	4175.539	Gd	50	-	-	-	4172.273	Pr	75	40	-	-
4178.535	Mo	5	2	-	-	4175.498	Ce	3	1	-	-	4172.23	Ho	2	-	-	Kn
4178.532	Nd	5	-	-	-	4175.488	Ne I	-	-	[40]	Ps	4172.23	Yb	2	2	-	-
4178.525	U	8	8	-	-	4175.448	U	2	2	-	-	4172.18	U	3	3	-	-
4178.441	Nd	-	5	-	-	4175.433	Ru	7	10	-	-	4172.161	Ce II	18	1	-	-
4178.406	Cb	1	10	-	-	4175.40	A	-	-	[10]	Ms	4172.127	Fe	80	50	-	-
4178.39	A	-	[20]	-	Rt	4175.32	Se II	-	-	[800]	Bl	4172.056	Ga I	2000 R	1000 R	-	-
4178.390	Ce	1	2	-	-	4175.299	Pr	20	10	-	Kn	4171.992	Dy	15	-	-	Kn
4178.389	V II	3	9	-	-	4175.236	Ce	15	2 h	-	-	4171.964	Ce	2	-	-	-
4178.36	P	-	[300 w]	-	Gu	4175.227	Cr	30	8	-	-	4171.925	Dy	4	2	-	Kn

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
4171.903	Ti II	15	70	-	4168.95	Th	3	-	-	4165.813	Th	8 w	5	-
4171.90	Mo	-	25	-	4168.946	Fe	10	1	-	4165.759	Mo	6	4	-
4171.854	Cu II	-	5	-	4168.762	Ru	7	-	-	4165.676	U	8	8	-
4171.824	Pr	75	40	Kn	4168.756	Nd	5	5	-	4165.66	Se II	-	[40]	Bl
4171.80	Tb	8	-	-	4168.74	Tb	2 d	-	-	4165.628	Zr I	3	-	-
4171.769	Ce	2	3	-	4168.71	Tm	2	-	Me	4165.606	Ce II	40	6	-
4171.71	Gd	25	1	-	4168.70	A	-	[2]	Ms	4165.532	Sm	2	3	-
4171.708	Er	15	-	-	4168.661	W	10	15	-	4165.519	Cr	80	35	-
4171.700	Fe	8	2	-	4168.64	Th	8	12	-	4165.50	Pr	2	1	-
4171.675	Cr	70	8	-	4168.586	Re I	15	-	-	4165.48	Ca	4	2 h	Ad
4171.63	N	-	[5 h]	Fl	4168.52	Tm	2	-	Me	4165.466	Th	20 w	10 w	-
4171.591	U	30	30	-	4168.516	Al II	-	[2 h]	Sy	4165.427	U	12	6	-
4171.568	Sc I	3	-	-	4168.494	Mo	15	15	-	4165.420	Fe	4	2	-
4171.56	I	-	[8]	Db	4168.490	Er	8	-	-	4165.395	Er	15	-	-
4171.554	Sm II	7	12	-	4168.467	Zr	5	2	-	4165.332	Re	2	-	-
4171.477	Zr I	20	-	-	4168.424	Al II	-	[4]	Sy	4165.187	Pr	5	2	-
4171.454	Mo	10	3	-	4168.41	A	-	[2]	Ms	4165.184	So I	15	5	-
4171.386	Ce II	18	-	-	4168.409	S II	-	[50]	Hn	4165.182	U	6	2	-
4171.349	Th	10	12 l	-	4168.40	Ac	-	100	Lx	4165.11	S II	-	[10]	Hn
4171.296	V I	15	7	-	4168.126	Cb	100	80	-	4165.087	Th	10 l	8 l	-
4171.185	W	25	12	-	4168.08	Pr	20	8	-	4165.08	Tb	2	-	-
4171.132	La I	8	-	-	4168.045	Pb	20	10	-	4165.039	Nd	15	15	-
4171.074	Mo	15	10	-	4168.043	Ir	3	-	Ab	4165.0	Na I	3	-	Fo
4171.045	Sb	-	3 wh	Sp	4168.02	Ho	3	-	Ex	4164.986	Yt	8	-	-
4171.04	Tb	20	3	-	4167.999	Hd	8	10	-	4164.96	S	-	[8]	Hn
4171.04	Pr	12	4	-	4167.98	Er	2	1	-	4164.854	Nd	4	3	-
4171.040	Ce	6	1 h	-	4167.97	Tb	15	1 h	-	4164.834	Er	5	-	-
4171.029	Ti I	35	7	-	4167.966	Dy	50	12	Kn	4164.81	Tb	3	-	-
4170.99	Xe II	-	[4 whl]	Hu	4167.960	Fe	10	2	-	4164.802	Ne I	-	[50]	Ps
4170.906	Fe I	80	40	S	4167.862	Fe	8	2	-	4164.790	U	8	10	-
4170.905	Co I	4	2	-	4167.804	Ce	12	3	-	4164.74	Dy	3	-	Kn
4170.904	Hf	10	1	-	4167.8	Na I	3	-	Fo	4164.660	Cb	30	50	-
4170.760	U	3	4	-	4167.73	U	5	2	-	4164.64	Yb	100	2	-
4170.751	Nd	6	5	-	4167.69	Pr	10	3	-	4164.557	Pt I	2	80	-
4170.656	Ce	2	-	-	4167.662	Th	10	8 w	-	4164.514	Ce	3	-	-
4170.592	Ru	10	-	-	4167.65	Mg	5	-	-	4164.48	Kr I	-	[2]	Me
4170.55	Dy	7	-	Kn	4167.6	bh C	-	-	L	4164.43	B	-	4	Sy
4170.535	W	15	7	-	4167.585	Ce	4	-	-	4164.412	Nd	10	5	-
4170.492	Er	6	-	-	4167.523	Nd	5	3	-	4164.392	Ru	10	-	-
4170.485	Zr I	5	2 h	-	4167.512	Ru I	100	150	-	4164.359	Ca	-	5 h	-
4170.48	Tb	7	-	-	4167.507	Yt I	50	10	-	4164.283	Cu II	-	3 h	-
4170.475	Th	10 l	10 l	-	4167.50	Lu	2	-	Me	4164.253	Th	10	10	-
4170.468	I	-	[25]	Ke	4167.40	Dy	5	-	Kn	4164.247	Er	7	-	-
4170.453	Nd	8	8	-	4167.389	Mg I	6	4	-	4164.23	Eu	2	-	-
4170.44	Tm	3	-	Me	4167.381	Zr	15 h	10 h	-	4164.192	Pr	200	50	Kn
4170.41	Hf II	4	4	Me	4167.369	U	4	-	-	4164.179	A I	-	[1000]	I
4170.394	Re	40	-	-	4167.28	Kr I	-	[5 d]	Me	4164.136	Ti I	10	-	-
4170.35	Sb II	-	8	Dv	4167.271	Gd I	10	-	-	4164.079	Mo	15	10	-
4170.348	Mo	8	2	-	4167.229	Sm	-	3	-	4164.016	V II	1	7	-
4170.309	Ir	4	-	Ab	4167.2	bh Sr	5	-	L	4163.984	Ce	5	-	-
4170.202	Cr	70	15	-	4167.20	Se II	-	[12]	Bt	4163.85	Tb	5	-	-
4170.11	Yb	3	20	-	4167.157	Gd	20	-	Kn	4163.83	Dy	7	-	Ed
4170.110	Gd	50	50	-	4167.032	U	6	2	-	4163.82	Kr II	-	[2]	Me
4170.051	Ru I	20	25	-	4167.025	Ir	10	-	-	4163.722	Sm II	2	5	-
4170.001	W	3	1	-	4166.970	Ni I	2	-	-	4163.677	U	10	10	-
4169.961	U	5	6	-	4166.884	Ce	20	6	-	4163.676	Fe I	12	1	-
4169.92	Tb	5	-	-	4166.876	Ru I	20	25	-	4163.657	Cb	60	40	-
4169.92	Rn	-	[20]	Wa	4166.84	Pr	4	2	-	4163.654	Ti II	35	150	-
4169.880	Ce II	12	3	-	4166.833	Ca	2	1 h	-	4163.653	Th	8	10	-
4169.842	Pd I	200	50	-	4166.83	Eu	2	1 h	-	4163.620	Cr	100	50	m
4169.838	Cr	80	25	-	4166.73	P II	-	[15 h]	Gu	4163.559	Ir	25	2	-
4169.820	Mo	20	20	-	4166.7	bh C	-	-	L	4163.53	Te	-	[50]	Bl
4169.773	Fe I	3	-	-	4166.654	Ce	10	1	-	4163.516	Ce	20	8 s	-
4169.773	Ce	12	2	-	4166.64	Hf II	U	4	Me	4163.472	Cb	3	5	-
4169.77	Te	-	[100]	Bl	4166.63	U	6	2	-	4163.455	Eu	4	-	-
4169.678	Pr	3	-	Kn	4166.560	Nd	8	4	-	4163.453	Er	8	-	-
4169.65	Se II	-	[12]	Bl	4166.522	Zr I	3	-	-	4163.444	Hf II	5	10	-
4169.60	Ca	2 h	2 h l	Ad	4166.50	Tb	12	1 h	-	4163.305	La I	8	4	-
4169.566	Cb	10	10	-	4166.43	Rn	-	[500]	Ro	4163.243	Cs	-	[15]	Sv
4169.480	Sm II	15	25	-	4166.412	Re	15 w	-	-	4163.225	U	6	6	-
4169.465	U	6	2	-	4166.365	Zr I	50	4	-	4163.147	Sm	5	10	-
4169.46	Eu	10	1 h	-	4166.36	Pr	5	2	-	4163.111	Gd	25	-	Kn
4169.459	Pr	15	10	-	4166.333	Sm	15	8	-	4163.031	Er	12	-	-
4169.41	Ho	2 h	-	Ex	4166.320	Ti I	35	10	-	4163.03	Ho	100	100	Kn
4169.358	Zr I	9	2 h	-	4166.282	Mo	20	15	-	4163.01	Pr	5	1	-
4169.348	Ti I	25	7	-	4166.279	Pd I	10	-	-	4163.004	U	4	4	-
4169.31	Tb	12	2 h	m	4166.202	Ce	6	-	-	4162.97	Tb	6	-	-
4169.260	V I	15	5	-	4166.153	W	7	3	-	4162.885	Pd I	4 h	-	-
4169.241	Dy	5	2	Kn	4166.091	Ne I	-	[30]	Pa	4162.876	Ce II	4	3 h	-
4169.23	O II	-	[50]	Fl	4166.040	Ir	150	10	-	4162.813	Cb	3	5	-
4169.167	Ir	15	2 h	-	4166.010	Ba II	12	50	-	4162.74	Gd	50	-	-
4169.09	Tb	8	-	-	4165.978	Re	10	-	-	4162.698	S II	-	[600]	Hn
4169.050	U	20	2 h	-	4165.855	Ce	5	-	-	4162.688	Hf	10	3	-
4168.98	A	-	[5]	-	4165.847	Cb	3	5	-	4162.685	Th	10	12	-
4168.967	He I	-	[7]	IOf	4165.84	Dy	2	-	Ed	4162.682	Mo	25	30	-

4162.6—4152.3 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4162.632	Ce	12	3	-	4159.641	Ti I	60	15	-	4156.28	Tb	8	-	-
4162.632	U	6	6	-	4159.622	W	5	2	-	4156.265	Nd	5	8	-
4162.51	Pr	5	2	-	4159.558	Nd	10	15	-	4156.261	Ru	10	5 wh	-
4162.468	Ce	2	1 h	-	4159.55	Tm	10	15	Me	4156.243	Th	8	8	-
4162.430	U	18	3 h	-	4159.513	Sm II	2	4	-	4156.240	Sm II	10 w	5	-
4162.39	S II	-	[18]	Hn	4159.47	Pr	8	3	-	4156.236	Zr II	25	15	-
4162.36	Hf II	5	10	-	4159.450	Al II	-	[4]	Sy	4156.11	A	-	[20]	Rt
4162.298	Cu II	-	2	-	4159.407	Al II	-	[2]	Sy	4156.083	Nd	10	20	-
4162.296	Ce	6	2	-	4159.393	Sm II	4	4	-	4156.0	Na I	3	-	Fo
4162.25	Dy	8	-	Kn	4159.393	U	5	4	-	4155.978	Ce	4	-	-
4162.17	Eu	5	1	m	4159.381	Ir	2	-	Ab	4155.702	Ir	80	5	Ab
4162.169	Co I	7	3	-	4159.34	Dy	12	2	Kn	4155.578	Mo	25	20	-
4162.16	Xe II	-	[30]	Hu	4159.23	Eu	10	1	-	4155.532	Ce	6	1	-
4162.112	Ir	3	-	Ab	4159.18	Tb	2	-	-	4155.525	Mn	40	5	-
4161.963	La	-	10	-	4159.172	Ru	15	6	-	4155.411	U	12	18	-
4161.947	Ce	6	3 h	-	4159.120	Ca	2 h	-	-	4155.38	Tb	2	-	-
4161.885	U	6	4	-	4159.105	U	6	5	-	4155.38	Er	4 d	-	Ed
4161.881	Sc I	15	4	-	4159.032	Ce II	30	5	-	4155.36	Th	5	3	Ex
4161.806	Ca	2 h	1 h	-	4159.00	Kr	-	[4 hs]	Me	4155.283	Mo	30	25	-
4161.796	Sr I	30	-	ISn	4158.88	Hf II	5	6	-	4155.221	Sm II	8	10	-
4161.793	Ce	6	-	-	4158.798	Fe I	100	25	-	4155.15	Tb	10 d	-	-
4161.781	U	2	4	-	4158.784	Os	50	1	-	4154.87	Gd	10	-	-
4161.763	Re	2	-	-	4158.78	Eu	8	-	Kn	4154.865	Ti	15	1	-
4161.656	Ru I	25	50	-	4158.610	Cs	-	[18]	Sv	4154.812	Fe I	100	8	-
4161.65	Pr	8	2	-	4158.590	A I	-	[1200]	I	4154.723	Sc	3	1	-
4161.642	Er	12	-	-	4158.59	Tm	5	-	-	4154.675	W	15	10	-
4161.64	P	-	[15]	Gu	4158.561	U	3	3	-	4154.63	Tb	5	-	-
4161.64	Dy	3	-	Ed	4158.54	Tb	15	1 h	-	4154.59	La II	2	2	Me
4161.575	Th	5	3	-	4158.469	Gd	5 h	-	Kn	4154.503	Fe I	100	80	-
4161.536	Ti II	8	30	-	4158.428	Er	9	-	-	4154.501	Er	6	-	-
4161.492	Fe	15	-	-	4158.425	Co	25 h	5	-	4154.50	A	-	[80]	Ms
4161.458	Nd	2	4	-	4158.425	Sm	8	2	-	4154.466	Ce	2	2	-
4161.415	Cr	50	30	-	4158.413	Ti	2	-	-	4154.393	Ta	4	-	-
4161.36	Eu	10	-	Kn	4158.319	U	6	6	-	4154.369	Rh	60	1	-
4161.35	Tb	5	2 h	-	4158.291	Ti	3	-	-	4154.29	Mo	-	10 h	-
4161.30	Pr	5	2	-	4158.28	Tb	10	1	-	4154.27	Dy	10	2	Kn
4161.298	Mo	1	25	-	4158.261	Ru	7	-	-	4154.14	Te	-	[15]	Bl
4161.251	Cb	5	15	-	4158.120	Yt I	2	-	-	4154.108	Fe	3	-	-
4161.210	Zr II	40	30	-	4158.081	Mo	3	3	-	4154.08	Lu	40	3	Me
4161.175	Ce	18	1	-	4158.081	Ir	25	-	-	4154.05	Pr	10	2	-
4161.155	Cu II	-	6	Sh	4158.08	In	-	8	Sq	4153.976	U	15	5	-
4161.080	Fe I	10	-	-	4158.07	Pr	10	5	-	4153.93	Se II	-	[40]	Bl
4160.999	Ta	20 h	2 h	-	4158.059	Ce	2 h	8 h	-	4153.925	Ce	12	3	-
4160.950	U	12	1 h	-	4158.049	Ti	15 h	2 h	-	4153.910	Fe I	120	100	-
4160.87	Mo	4	2	-	4158.04	Xe II	-	[100 wh]	Hu	4153.86	Tb	2	-	-
4160.86	Pr	12	3	-	4158.021	U	6	1 h	-	4153.816	Cr I	50	30	-
4160.859	Nd	15	2	-	4158.010	Cb	3	5	-	4153.760	U	2 h	2	-
4160.763	Re	15 w	-	-	4158.0	bh C	-	-	L	4153.754	Zr I	5	-	-
4160.72	As II	-	10	Ro	4157.86	Dy	5	2	Kn	4153.730	Nd	3	4	-
4160.565	Nd	10	10	-	4157.82	Cl II	-	[25]	Ks	4153.663	Pr	6	-	Kn
4160.56	P II	-	[30]	Gu	4157.80	Eu	20	-	-	4153.65	Ca	-	6	-
4160.525	Sc I	1	2	-	4157.791	Fe I	150	80	-	4153.623	Cu II	-	2 h	Sh
4160.476	Eu	9	-	-	4157.788	Gd I	25	-	-	4153.51	Tb	3	-	-
4160.47	Pr	20 w	5 w	-	4157.77	Pr	8	2	-	4153.510	Gd	10	-	-
4160.418	Ce	4	-	-	4157.736	Ru	15	5	-	4153.506	Ir	30	-	Ab
4160.410	U	2	1	-	4157.70	S I	-	[10]	Ms	4153.482	U	8	8	-
4160.351	W	5	2	-	4157.64	As II	-	30	Ro	4153.44	Eu	5	2	-
4160.310	Er	8	-	-	4157.640	U	6	-	-	4153.405	Fe	1	1 h	-
4160.273	U	6	1	-	4157.623	Yt I	2	-	-	4153.396	Ce	4	-	-
4160.268	Os	6	-	-	4157.575	Nd	3	5	-	4153.374	Os	9	-	-
4160.264	La I	40	50	-	4157.572	Ce	3 h	1	-	4153.36	Dy	5	-	Kn
4160.263	Al II	-	[15]	Sy	4157.513	La I	10	3	-	4153.328	V I	12	3	-
4160.251	Mo	4	5	-	4157.403	Mo	25	25	-	4153.326	Sm II	5	10	-
4160.24	Dy	10	2	Kn	4157.39	Br I	-	[4]	Ks	4153.310	O II	-	[200]	Fl
4160.239	Al II	-	[12]	Sy	4157.33	P	-	[30 h]	Gu	4153.173	Mo	10	2	-
4160.182	Ce	8	-	-	4157.26	Re	2	-	-	4153.129	Ce II	12	2	-
4160.108	Ce II	8	-	-	4157.14	Br	-	[10]	Bl	4153.11	Dy	6	-	Kn
4160.040	W	5	3	-	4157.036	W	3	25	-	4153.098	S II	-	[600]	Hn
4160.0	Ho	3	-	Kn	4157.019	Mn	40	2 d	-	4153.067	Cr I	40	6	-
4160.00	Br	-	[8]	Bl	4156.955	Pd I	3	3 h	-	4152.93	Pb II	-	5	Sx
4159.976	Ta	5	-	-	4156.953	Ce	2 h	3 h	-	4152.928	Ce	4	1	-
4159.965	Os	20	1	-	4156.90	Pr	10	4	-	4152.775	La II	40	50	-
4159.918	Re	20	-	-	4156.803	Fe I	100	80	S	4152.775	Cr	50	12	-
4159.881	Er	20 w	-	-	4156.79	Mo	15	10	-	4152.771	Er	6	-	-
4159.869	Ce	3	8 h	-	4156.74	Hf II	-	3	-	4152.75	Ho	30	40	Kn
4159.865	U	3	5 h	-	4156.682	Cb	5	100	-	4152.658	V	9	4	-
4159.83	Pr	15	3	-	4156.681	Fe I	2	-	-	4152.637	Zr I	25	-	-
4159.809	Al II	-	[4]	Sy	4156.68	Hg	-	[50]	Ps	4152.631	Re I	30	-	-
4159.792	W	5	2	-	4156.652	U	15	8 h	-	4152.576	Cb	100	300	-
4159.75	P	-	[15]	Gu	4156.54	O II	-	[30]	Fl	4152.54	Ho	30	30	Kn
4159.75	Se II	-	[70]	Bl	4156.523	Th	10	10	-	4152.54	A	-	[20]	Ms
4159.727	Ce	2	-	-	4156.518	Pr	12	10	-	4152.43	Dy	15 r	4	Kn
4159.725	Al II	-	[6]	Sy	4156.388	Ce	2	1	-	4152.4	P	-	[15]	Gu
4159.686	V I	20	12	-	4156.376	U	2	2	-	4152.355	Sc I	10	4	-
4159.667	Th	5	10	-	4156.31	Tm	10	-	-	4152.34	Se	-	[80]	Bl

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis]	R			Arc	Spk., [Dis]	R			Arc	Spk., [Dis]	R
4152.34	Pr	5	4	-	4149.171	K II	-	[20]	Dm	4145.884	Er	9	-	-
4152.308	Er	7 w	-	-	4149.150	Ce	5	21	-	4145.87	Tm	5	-	-
4152.29	Tm	18	-	-	4149.07	Yb	20	6	-	4145.856	Ce	-	2	-
4152.285	Re	12	-	-	4148.97	Ho	3	1	Kn	4145.804	Cr	-	20	-
4152.25	Eu	2	1 h	m	4148.945	Mo	40	25	-	4145.782	I I	-	[15]	Kn
4152.22	Tb	6	-	-	4148.91	S	-	[5]	Hn	4145.759	N II	-	[10]	Fl
4152.211	Sm II	8	15	-	4148.901	Ce	25	3	-	4145.759	Hf	10	1	-
4152.170	Fe I	70	5	-	4148.88	Dy	3	-	Ed	4145.738	Ru I	125	150	-
4152.12	Pd	2	-	Sh	4148.861	Gd	10	-	-	4145.596	Mo	5	3	-
4152.067	Sm	3	3	-	4148.859	V I	8	3	-	4145.59	Dy	5	-	Kn
4152.035	Cb	10	8	-	4148.797	Mn	50	30	-	4145.491	Ce	3	-	-
4151.970	Ce	30	8	-	4148.751	U	3	3 h	-	4145.44	Tb	2	-	Ed
4151.955	Fe	4	1	-	4148.680	Mo	6	5	-	4145.391	U	6	8	-
4151.955	La II	200	300	-	4148.61	Eu	2	-	-	4145.244	Eu	8	1	-
4151.951	Ir	2	-	Ab	4148.564	U	5	5	-	4145.243	Sm	4	1	-
4151.879	Mo	20	15	-	4148.487	Zr	4	2	-	4145.159	W	15	8	-
4151.721	Ce	2	-	-	4148.482	Ti	4	1	-	4145.155	Cb	4	2	Me
4151.679	Nd	5	10	-	4148.478	Ce	2	3	-	4145.12	Kr II	-	[250]	Me
4151.66	Eu	4	-	-	4148.457	Pr	15	12	-	4145.100	S II	-	[250]	Hn
4151.59	Gd	3	-	Kn	4148.403	Ca	2	2	-	4145.052	Ti I	15	2	-
4151.575	U	2	3 h	-	4148.390	Ti I	7	-	-	4144.995	Ce	10 l	4	-
4151.55	Eu	4	1 h	m	4148.375	Ru I	60	15	-	4144.923	Nd	5 d	1	-
4151.46	N I	-	[1000]	Du	4148.348	Th	5	5	-	4144.852	Ca	2	1	-
4151.373	Mo	4	2	-	4148.30	Pt II	-	5	Sh	4144.766	Er	12 d	-	-
4151.357	Pd I	2	-	-	4148.288	Re	10	-	-	4144.75	Pr	6	3	-
4151.352	Ir	30	2	Ab	4148.23	Tb	10	1	-	4144.697	U	10	5	-
4151.267	Cs II	-	[20]	Sv	4148.193	U	2	2 h	-	4144.553	Nd	10	10	-
4151.26	Ag	-	2 h	-	4148.182	Th	10	10	-	4144.51	Eu	8	1	Kn
4151.238	U	6	1	-	4148.161	Ce	15	2	-	4144.492	Ce	10	3	-
4151.209	Sm	5 d	-	-	4148.155	La II	-	4	-	4144.45	Tb	80	10	-
4151.19	P	-	[15]	Gu	4148.025	U	12	-	-	4144.370	Ce	2	-	-
4151.14	Ho	4	4	Kn	4148.0	Na I	3	-	Fo	4144.359	Re I	125 w	-	-
4151.13	Tb	6	1	-	4147.976	Sm	8 h	-	-	4144.354	La I	3	-	-
4151.109	Er	20	3	-	4147.891	Ta	40	30	-	4144.320	Sm	-	3	-
4151.047	Re	2 h	-	-	4147.80	Yb	2	2	Me	4144.240	Gd	3	-	Kn
4151.01	Pr	6 d	3 d	-	4147.78	Eu	3	-	-	4144.232	Er	5	-	-
4150.968	Zr II	25	10	-	4147.768	V I	3 h	-	-	4144.23	Pr	4	3	-
4150.962	Ti I	35	15	-	4147.713	Sm II	3	10	-	4144.22	Eu	2	-	-
4150.908	Ce	18	3	-	4147.673	Ca	3	2	-	4144.205	Ce	-	3	-
4150.88	Tb	4	-	-	4147.673	Fe I	200	100	S	4144.164	Ru I	150	200	-
4150.85	Mo	-	20 h	-	4147.55	Pr	4	2	-	4144.147	Ca	-	3	-
4150.82	U	3	3	-	4147.532	Mn	40	20	-	4143.98	Br I	-	[20]	Ks
4150.8	Ho	2	-	Kn	4147.525	Ce	10	2	-	4143.936	La I	25	15 h	-
4150.793	Re	2	-	-	4147.43	Tb	6	-	-	4143.931	Cb	5 h	5 h	Me
4150.788	Nd	3	3	-	4147.403	Sc I	3	1	-	4143.877	U	5	1 h	-
4150.78	Er	7 w	2	-	4147.388	U	8	8	-	4143.871	Fe I	400	250	S
4150.71	B	-	2	Sy	4147.367	Zr I	10	-	-	4143.84	P	-	[50]	Gu
4150.699	Os	8	1 h	-	4147.331	Os	9	-	-	4143.76	O II	-	[15]	Mh
4150.672	V	10	8	-	4147.314	Ce	2	-	-	4143.759	He I	-	[15]	IMr
4150.67	Ne II	-	[30]	Bn	4147.196	Ce	1	3	-	4143.742	La II	-	10 h	-
4150.61	Gd	5	-	Kn	4147.19	Eu	8	1	-	4143.700	Tb	15	1	-
4150.550	Ti I	10	1	-	4147.190	Cb	8	10	-	4143.65	N I	-	[30]	Ry
4150.531	Re	10	-	-	4147.18	Tm	8	-	-	4143.587	U	2	3	-
4150.53	Tb	12	1 h	-	4147.14	Pr	12	4	-	4143.549	Mo	100	100	-
4150.432	Co I	3	2	-	4147.138	Nd	15	3	-	4143.53	Tb	25	-	m
4150.41	U	8	8	-	4147.10	Dy	4	2	Ed	4143.420	Fe I	200	100	-
4150.401	Ce	2	1	-	4147.09	Cl II	-	[30]	Ks	4143.280	Ti I	6	-	-
4150.366	Ni I	3	-	-	4146.979	U	4	4	-	4143.24	Tb	4	-	Ed
4150.299	Ru	20	9	-	4146.95	Tb	12	-	m	4143.206	Cb	10	10	-
4150.264	Fe I	50	2	-	4146.94	S II	-	[30]	Hn	4143.140	Ir	8	-	-
4150.236	La I	2	-	-	4146.846	Mo	-	30	-	4143.136	Pr	200	50	-
4150.122	Cb	15	20	-	4146.81	Tm	7	-	-	4143.100	Dy	40	8	Kn
4150.08	Tm	3	-	-	4146.78	Xe I	-	[2]	Me	4143.046	Ti I	30	8	-
4150.04	Pr	5	2	-	4146.771	Ru I	100	70	-	4143.039	Cu II	-	2 wh	-
4150.029	U	5	2	-	4146.743	Sm II	2	-	-	4142.97	Eu	2	-	-
4149.991	Th	10	12	-	4146.695	Cr	25	2	-	4142.96	Er	30	15	m
4149.972	Re I	40 w	-	-	4146.614	U	15	-	-	4142.958	Sm	15	-	-
4149.936	Ce II	6 l	4 l	-	4146.60	Sb II	-	6	Dv	4142.882	V I	6	3	-
4149.834	Sm II	20	15	-	4146.600	Nd	10	4	-	4142.86	Ho	-	3	Ex
4149.8	bh Ca	2	-	L	4146.537	Pr	20	12	-	4142.839	Yt I	100	25	-
4149.786	Ce	4	1	-	4146.485	Ce	4	-	-	4142.826	Ce	6	2	-
4149.747	W	10	2	-	4146.479	Mo	4	2	-	4142.813	Sm	10	2	Kn
4149.710	In II	-	[30]	Ps	4146.454	Cr II	20	1	-	4142.771	Re	8	-	-
4149.695	Mo	6	5	-	4146.35	Eu	8	1 h	Kn	4142.717	Ce	2	-	-
4149.582	Mo	5	-	-	4146.239	Re	20	-	-	4142.703	Th	10	10	-
4149.475	Gd	5	-	Kn	4146.235	Cr	20	2	-	4142.50	Cr	10	1	Ex
4149.454	Ti I	12	1	-	4146.234	Ce II	25	4	-	4142.492	Ti I	12	2	-
4149.442	W	10	4	-	4146.132	Nd	10	10	-	4142.482	Th	10	10	-
4149.41	Mo	4	3	-	4146.08	Tb	10	-	-	4142.46	Tb	3	-	-
4149.370	Fe I	100	35	-	4146.071	Dy	40	4	-	4142.434	Pr	3	-	-
4149.23	Eu	12	-	Kn	4146.070	Fe I	15	3	-	4142.398	Ce	30	30	-
4149.204	U	2	2	-	4146.06	O II	-	[40]	Mh	4142.350	U	3	2	-
4149.203	Zr II	100	100	-	4146.003	Cb	4	3	-	4142.343	Ce	35	6	-
4149.203	Sm	4	1 h	-	4145.97	Eu	2	-	Ed	4142.320	Ni	15	-	-
4149.18	Tb	15	2	-	4145.949	W	8	3	-	4142.291	S II	-	[150]	Hn

4142.2—4132.8 Å.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4142.256	W	15	9	-	4139.322	W	12	5	-	4135.916	Ir	8	-	-
4142.245	Cb	4	3	-	4139.258	V I	10	6	-	4135.894	Sm	6	3	-
4142.193	Cr	35	8	-	4139.140	U	10	10	-	4135.887	Ce	10	2	-
4142.119	Ho	2	1 h	Kn	4139.11	Kr	-	[100 whl]	Me	4135.86	Kr II	-	[3 h]	Me
4142.184	Ni I	2	-	-	4139.06	Tb	4	-	Ed	4135.793	Nd	5	3	-
4142.162	Mo	8	4	-	4139.048	Yb	5 wd	-	-	4135.784	Os	200	50	-
4142.109	U	4	2	-	4139.031	Ce	2	21	-	4135.756	U	10	1	-
4142.047	Mo	8	4	-	4138.99	Se II	-	[10]	Bl	4135.680	Zr I	20	-	-
4142.036	Ce	4	-	-	4138.969	Sm II	8	1	Kn	4135.66	Br	-	[20]	Bl
4142.00	Pr	8	3	-	4138.81	Xe	-	[2 h]	Hu	4135.496	Sm	15	2	-
4141.96	Ca	2	3	Ad	4138.743	Ce	2	1	-	4135.443	Ce	201	41	-
4141.867	Fe I	15	5	-	4138.731	Sm	8	-	-	4135.439	Gd	4	4	-
4141.832	V I	7	3	-	4138.704	Hf II	-	6	-	4135.424	Cb	4	2	-
4141.83	Hf II	-	8	Me	4138.664	U	10	10	-	4135.383	Mo	10	10	-
4141.746	Eu	10	-	-	4138.65	Mo	-	5	-	4135.38	Tb	12	-	-
4141.740	La II	200	200	-	4138.6	Na	3	-	Fo	4135.325	Nd	10	15	-
4141.641	Th	8	101	-	4138.58	Br	-	[5]	Bl	4135.272	Ho	300	150	-
4141.58	Cd II	-	10	-	4138.543	Mo	20	12	-	4135.212	Mo	5	4	-
4141.56	Tb	25	-	-	4138.54	Dy	10	-	Kn	4135.163	U	6	5	-
4141.516	Dy	15	4	-	4138.530	Re	2	-	-	4135.146	Ir	2	-	Ab
4141.489	Mo	1	30	-	4138.38	Br	-	[8]	Bl	4135.135	Sm II	5	10	-
4141.460	In II	-	[15]	Ps	4138.36	Tm	80	8	Me	4135.133	Xe I	-	[20]	IMe
4141.42	Pb	-	10	Sx	4138.352	Ce	12	4	-	4135.105	Ce	5	-	-
4141.370	V I	15	3	-	4138.335	Er	9	-	-	4135.10	Yb	15	50	m
4141.296	Cu II	-	3	Sh	4138.30	Eu	2	-	-	4135.038	Os	6	1	-
4141.291	Ir	6	-	-	4138.300	Cb	4	2	-	4135.036	Mn	50	30	-
4141.257	Pr	150	50	-	4138.210	Zr	10	10 h	-	4135.0	bh Sr	4	-	L
4141.228	U	20	30	-	4138.19	Pr	20	8	-	4134.955	Eu	7	1 h	-
4141.21	Sb II	-	7	Dv	4138.185	Mo	20	15	-	4134.880	U	4	6	-
4141.17	Se I	-	[10]	Rd	4138.14	Dy	2	-	Ed	4134.85	Ru	12	5	-
4141.063	Mn	50	30	-	4138.102	Ce	12	3	-	4134.78	Cd II	-	15	Vs
4141.04	Si	-	2	Sy	4138.022	I	-	[8]	Ke	4134.75	Dy	10	-	Kn
4141.034	Eu	9	2	-	4138.020	Gd	5	-	Kn	4134.721	K II	-	[40]	Dm
4141.02	Gd	5	-	-	4137.989	Nd	10	4	-	4134.713	Nd	6	-	-
4141.0	Na I	3	-	Fo	4137.96	Kr	-	[50 wh]	Me	4134.681	Fe I	150	100	S
4140.964	In II	-	[5]	Ps	4137.925	La II	4	2	-	4134.591	Cb	10	10	-
4140.945	Ce	5	-	-	4137.923	Ir	5	-	-	4134.565	Ce	-	2 s	-
4140.827	Pd I	100 r	-	-	4137.903	U	6	3	-	4134.56	Ho	5	1 h	Kn
4140.818	Ir	6	-	-	4137.840	Os	100	3	-	4134.488	V I	40 r	15 r	-
4140.769	Er	12	-	-	4137.711	U	6	1	-	4134.45	Tm	3	4	Me
4140.751	Ce	8	61	-	4137.646	Ce	25	12	-	4134.425	Fe I	10	3	-
4140.75	Tb	8	-	-	4137.63	N I	-	[50]	Du	4134.389	Cr	25	3	-
4140.607	Sb II	-	15	Sp	4137.606	Re I	15	-	-	4134.340	Fe I	2	-	-
4140.587	Nd	2	-	Kn	4137.593	Cb	3	5	-	4134.314	Zr I	8	-	-
4140.573	Pr	3	-	-	4137.543	W	12	12	-	4134.31	Tb	4	1 h	m
4140.512	Ce	5	-	-	4137.49	Pr	2	1	-	4134.172	Sb II	-	8	-
4140.5	Cd	5	-	Sd	4137.49	Tm	3	-	-	4134.167	Gd I	25	1	-
4140.454	Gd	20	20	-	4137.473	Ce II	6	2	-	4134.14	Dy	12	2	Kn
4140.420	In II	-	[5]	Ps	4137.431	Se II	-	[50]	Bl	4134.117	Th	10	10	-
4140.407	W	12	3	-	4137.3	P	-	[15 h]	Gu	4133.95	Sb	-	5	Sp
4140.40	Se I	-	[20]	Rd	4137.288	Ti I	50	15	-	4133.863	Dy	15	2	-
4140.38	Hg	-	[200]	Ps	4137.272	Er	8	-	-	4133.862	Fe I	50	7	-
4140.35	Sr	5	2	Sd	4137.257	Mn	40	5	-	4133.800	Ce	35	8	-
4140.32	Pr	5	1	-	4137.234	Ru I	25	15	-	4133.797	Sm	2	-	-
4140.304	Sc I	10	2	-	4137.16	Pr	3	1	-	4133.777	V I	9	6	-
4140.239	Th	15 s	15 s	-	4137.095	Cb I	100	60	-	4133.715	Ce	3	1	-
4140.21	Br	-	[30]	Bl	4137.083	Gd	20	40	-	4133.695	Zr I	5	3	-
4140.21	Hf II	-	4	Me	4137.076	Eu	10	-	-	4133.68	Kr II	-	[5 whl]	Me
4140.200	Ce	3	6	-	4137.04	Tb	5	1 w	-	4133.66	Cl II	-	[20]	Ks
4140.192	Er	12	-	-	4137.025	La I	15	-	-	4133.654	N II	-	[5]	Fl
4140.189	Mn	15	5	-	4137.004	Fe	100	80	-	4133.65	Ne II	-	[30]	Bl
4140.112	Dy	3	-	Ed	4136.95	Mo	15	8	-	4133.618	Pr	10	5	-
4140.111	Ir	5	-	-	4136.897	Ce	5	2	-	4133.569	U	-	6	-
4140.045	W	12	3	-	4136.807	U	15	8	-	4133.55	Tb	2	-	-
4140.83	Hg I	-	[5]	Wd	4136.769	Ce	5	-	-	4133.524	Zr I	4	-	-
4140.03	Tm	2	-	Me	4136.752	Nd	3	5	-	4133.492	U	15	-	-
4140.02	Eu	5	2 h	-	4136.612	Eu	12	2	-	4133.482	W	6 d	4 d	-
4140.008	Zr I	9	-	-	4136.46	Tb	4	-	-	4133.418	Cb	2	5 h	-
4139.967	Ir	2	-	-	4136.446	Re I	150 w	-	-	4133.417	Re I	200	-	-
4139.923	Fe I	40	30	-	4136.442	U	12	-	-	4133.370	Dy	10	4	-
4139.844	Ti I	7	-	-	4136.439	Rb	-	3	Rr	4133.361	Nd	15	10	-
4139.819	Ce	5	1	-	4136.386	V I	9	4	-	4133.334	La	15	25	-
4139.81	Tb	10	-	-	4136.383	Th	5	8	-	4133.246	I	-	[15]	Ke
4139.707	Cb	50	50	-	4136.361	Hf	10	6	-	4133.201	U	8	8	-
4139.693	Eu	6	-	-	4136.351	W	9	8	-	4133.171	Sm II	4	4	-
4139.66	Se I	-	[40]	Rd	4136.347	Ca	2 h	3	-	4133.148	Ir	10	-	-
4139.646	Sm	5 d	2	-	4136.328	I	-	[15]	Ke	4133.115	Eu	4	1 h	-
4139.56	Dy	8	2	Kn	4136.28	Se II	-	[100]	Bl	4133.048	Ce	3	-	-
4139.528	Mo	10	3	-	4136.24	Ho	40	25	Kn	4133.006	Sc I	8	3	-
4139.47	Eu	3	-	-	4136.232	Nd	3	5	-	4133.002	Mo	15	-	-
4139.450	Co I	10	-	-	4136.198	Ta	80	30	-	4132.904	In	-	15	-
4139.436	Cb	8	-	-	4136.19	Eu	6	-	Kn	4132.877	V I	2	-	Me
4139.426	Ce	10	2	-	4136.125	Rb II	-	15	Rr	4132.85	Dy	9	2	Kn
4139.36	Tb	3	-	-	4136.109	V I	10	7	-	4132.83	Tb	9	-	-
4139.330	U	6	-	-	4135.932	Nd	4	3	-	4132.82	O II	-	[100]	Fl

Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R
4132.76	Se	-	-	[200]	Bt	4129.873	Nd	2	-	-	Kn	4127.302	Cr I	20	10	-	-
4132.751	Th	10	12	-	-	4129.737	Eu II	150 R	50 R	-	Rt	4127.30	Tb	9	2	-	-
4132.750	Mo	12	10	-	-	4129.70	A	-	[10]	-	-	4127.288	Eu	3	-	-	-
4132.69	Tm	12	15	-	-	4129.695	Mo	8	4	-	-	4127.251	W	5	5	-	-
4132.637	Ce II	8	2 h	-	-	4129.663	U	4	4	-	-	4127.16	Ho	150	60	Kn	-
4132.554	Nd	4	5	-	-	4129.621	Eu	15	-	-	-	4127.113	Er	10	-	-	-
4132.501	La II	-	10 h	-	Me	4129.54	Tm	1	2	-	Me	4127.104	Ce	4	1	-	-
4132.497	Ca I	-	2	-	-	4129.460	U	6	5	-	-	4127.04	Te	-	[15]	Bl	-
4132.48	Cl II	-	[200]	-	Ks	4129.44	Ho	3	1	-	Ex	4126.995	Ce	3	1	-	-
4132.47	Tb	5	-	-	-	4129.433	Er	10	2	-	-	4126.96	F II	-	[3]	Di	-
4132.447	Ce	4	-	-	Kn	4129.426	Cb	15	20	-	-	4126.941	Ne I	-	-	[2]	Ps
4132.441	Cr II	-	2	-	-	4129.425	Dy	20	8	-	Kn	4126.94	Tb	3	4	-	-
4132.431	Ba	10	4	-	-	4129.42	Tb	10	1 w	-	-	4126.925	Cr	30	4	-	-
4132.313	Ce	8	2 s	-	-	4129.378	Ta	200	40	-	-	4126.902	Cb	3	10	-	-
4132.29	Li I	400 wh	-	-	Fl	4129.368	Cr I	10	-	-	HI	4126.883	Ce	5	1	-	-
4132.282	Re I	20	-	-	-	4129.34	O II	-	[15]	-	Fl	4126.88	Fe I	8	1	-	-
4132.281	Gd	25	20	-	-	4129.225	Sm II	5	12	-	-	4126.854	U	3	3	-	-
4132.24	Eu	4	1 h	-	-	4129.22	Fe	5	1	-	-	4126.799	W	12	12	-	-
4132.230	Mo	20	20	-	-	4129.176	Ce	5	1	-	-	4126.72	Tb	6	-	-	-
4132.230	Pr	15	8	-	-	4129.173	Ti	15	7	-	-	4126.660	Ce	8	3 s	-	-
4132.22	Tb	3	-	-	-	4129.15	Se II	-	[200]	-	Kh	4126.57	Se II	-	[150]	Bl	-
4132.214	W	6	8	-	-	4129.148	Pr	20	15	-	-	4126.564	Sc	2	-	-	-
4132.155	Co I	15 h	-	-	-	4129.13	I	-	[2]	-	Mu	4126.564	Mo	10	2	-	-
4132.14	Yb	3 h	-	-	Me	4129.13	Dy	10	2	-	Kn	4126.529	Mo	25	20	-	-
4132.060	Fe I	300	200	-	S	4129.12	Ca	2 h	2	-	Ad	4126.521	Cr I	100	50	-	-
4132.017	V I	12	10	-	-	4129.103	Ce	3	-	-	-	4126.477	Ir	25	-	-	-
4132.003	Cs II	-	[10]	-	Ot	4128.961	Os	60	3	-	-	4126.436	U	5	5	-	-
4131.920	Mo	20	10	-	-	4128.905	Ce	3	1 h	-	-	4126.412	Ru I	12	1	-	-
4131.855	Ce	5	2	-	-	4128.889	U	4	-	-	-	4126.364	Ce	6	-	-	-
4131.82	Pr	12	4	-	-	4128.870	Rh I	300	150	-	-	4126.227	Er	10 s	2	-	-
4131.79	Lu	10	-	-	Me	4128.858	V I	9	5	-	-	4126.190	Fe I	80	60	-	-
4131.784	U	6 h	6	-	-	4128.833	Mo	40	40	-	-	4126.185	Cb	1	10	-	-
4131.74	La II	3	3	-	Me	4128.756	U	2	2	-	-	4126.15	Pr	10	5	-	-
4131.73	A II	-	[80]	-	Rt	4128.735	Fe II	2	2 h	-	-	4126.14	Dy	8	2	-	Kn
4131.527	Cb	2	10	-	-	4128.72	Tb	4	-	-	-	4126.113	Sm	10	-	-	-
4131.502	Er	9	-	-	-	4128.705	Nd	10	10	-	-	4126.101	I	-	-	[8]	Ke
4131.482	Gd	50	50	-	-	4128.690	I	-	[35]	-	Ke	4126.099	Cr	15	2	-	-
4131.45	Tb	10	2	-	-	4128.65	A	-	[20]	-	Rt	4126.067	Ir	12	-	-	Ab
4131.433	Th	8	8	-	-	4128.479	Ce	3	-	-	-	4126.022	Ce	2	-	-	-
4131.430	Mn	10	-	-	-	4128.46	Tb	3	-	-	-	4126.0	bh Ca	3	-	-	L
4131.360	Cr	30	20	-	-	4128.429	Ir	10	2	-	Ab	4125.883	Fe I	25	15	-	-
4131.353	U	6	6	-	-	4128.405	Cr	10	6	-	-	4125.868	Sm	15	10	-	-
4131.347	Ce	2	-	-	-	4128.368	Pd I	5 h	-	-	-	4125.777	Ce II	6 s	1	-	-
4131.306	Nd	8	4	-	-	4128.363	Ce	10 s	4	-	-	4125.761	Gd	3	3	-	-
4131.254	Ti I	15	2	-	-	4128.336	U	18	20	-	-	4125.735	W	1	-	-	-
4131.225	Ru	10	-	-	-	4128.32	Ho	-	3	-	Ex	4125.709	Ce	2	-	-	-
4131.117	Mn	50	40	-	-	4128.304	Yt I	150	30	-	-	4125.65	Ho	20	15	-	Kn
4131.11	Tb	8	1	-	-	4128.284	Mo	50	25	-	-	4125.635	Er	5	-	-	-
4131.100	Ce II	30	8	-	-	4128.241	Dy	20	4	-	Kn	4125.621	Fe	80	30	-	-
4131.054	Ne I	-	[70]	-	Ps	4128.21	Pb	-	5	-	Sx	4125.619	Mo	-	50	-	-
4131.049	Os	12	1	-	-	4128.14	Mn	15	15 s	-	-	4125.575	Cb	3	5	-	-
4131.049	Th	8 d	5 d	-	-	4128.132	Nd	8	4	-	-	4125.53	Eu	10	-	-	Kn
4131.038	Dy	12	4	-	-	4128.116	Sm	5	2	-	-	4125.500	Nd	8	1 h	-	-
4131.01	Xe II	-	[10]	-	Hu	4128.11	Si	-	20 w	-	Sy	4125.429	Ce	6	2	-	-
4130.96	Si	-	25 w	-	Sy	4128.10	Eu	2	-	-	Kn	4125.42	Tb	2	-	-	-
4130.95	S	-	[15]	-	Bl	4128.094	Re	6	-	-	-	4125.248	Cb	10	20	-	-
4130.86	Cl II	-	[20]	-	Ks	4128.080	Ca	2	4	-	-	4125.239	Sm	5	1	-	-
4130.846	Mo	-	15	-	-	4128.072	Ne I	-	[30]	-	Ps	4125.21	Tb	10 w	1 w	-	-
4130.77	P II	-	[30]	-	Gu	4128.071	V I	30 r	20 r	-	-	4125.180	W	9	12	-	-
4130.770	Pr	25	20	-	-	4128.068	Ce II	10	3	-	-	4125.129	U	15	1	-	-
4130.740	U	-	3 h	-	-	4127.962	Zr I	4	2	-	-	4125.10	Hf	2	6	-	Me
4130.731	Ir	2	-	-	Ab	4127.925	U	6	3	-	-	4125.06	Pr	12	5	-	-
4130.722	Nd	15	8	-	-	4127.917	Ir	30	2	-	-	4125.048	Nd	4 d	4	-	Kn
4130.706	Ce II	25	8	-	-	4127.879	Ta	15	8	-	-	4124.91	Hg II	-	-	[5]	Ps
4130.664	Ba II	50 r	60 wh	-	-	4127.868	Ru I	25	35	-	-	4124.910	Yt II	7	18	-	-
4130.512	Ne I	-	[20]	-	Ps	4127.803	Fe	25	15	-	-	4124.910	Eu	8	2	-	-
4130.462	Re	10	-	-	-	4127.795	Hf II	10	10	-	-	4124.901	Rh I	5	3	-	-
4130.454	Zr I	4	-	-	-	4127.743	Ce	8	4	-	-	4124.796	Er	2	-	-	-
4130.43	Ca	-	2	-	Ad	4127.685	Gd	10	20	-	-	4124.790	Re	4	-	-	-
4130.42	Dy	12	2	-	Kn	4127.645	Mo	6	3	-	-	4124.785	Ce	25	5	-	-
4130.378	Gd	200	10	-	-	4127.643	Cr I	30	10	-	-	4124.745	Ir	8	-	-	Ab
4130.35	Tb	3	1	-	-	4127.612	Fe I	100	80	-	S	4124.73	Lu	200	10	-	Me
4130.257	Mo	-	8	-	-	4127.582	Yt II	2	2	-	-	4124.725	U	30	25	-	-
4130.234	Ce	-	4	-	-	4127.54	S	-	[3]	-	Hn	4124.7	bh Sr	2	-	-	L
4130.21	Cl	-	[4]	-	Bl	4127.540	Ti I	70	15	-	-	4124.65	Th	3	3	-	-
4130.145	V I	3	2	-	-	4127.49	P II	-	[70]	-	Gu	4124.626	Dy	15	8	-	Kn
4130.14	Tb	10	-	-	-	4127.454	Cb	4	10	-	-	4124.599	Os	30	9	-	-
4130.123	Ce	-	2	-	-	4127.440	Ru I	20	30	-	-	4124.553	Eu	8	2	-	-
4130.105	Mo	10	8	-	-	4127.367	Ce	30	12	-	-	4124.545	Mo	30	25	-	-
4130.100	Ir	15	-	-	Ab	4127.36	Bi	1	2	-	To	4124.540	Ir	4	-	-	Ab
4130.04	Fe I	20	3	-	-	4127.35	Tm	3	-	-	-	4124.35	Pr	5	2	-	-
4129.989	Sm	10	-	-	-	4127.34	Te	-	[30]	-	Bl	4124.27	Tb	3 h	-	-	m
4129.98	W	5	6	-	-	4127.34	Yb	2	-	-	Me	4124.115	Nd	2	-	-	-
4129.927	Cb	15	30	-	-	4127.331	U	8	1 h	-	-	4124.10	N II	-	-	[2]	Fl
4129.921	Ce	3	-	-	-	4127.322	Mo	-	20	-	-	4124.072	V I	8	5	-	-

4124.0—4115.4 A.

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
4124.071	Hg	-	[30]	Cn	4121.63	Re I	50	-	-	4118.773	Co I	1000 R	-	-
4124.06	Pr	5	2	-	4121.602	Ce II	8	1	-	4118.758	F II	-	[6]	Di
4124.02	Eu	2	-	Kn	4121.57	Tb	2	-	-	4118.686	Pt I	400	10	-
4124.00	Cl II	-	[12]	Ks	4121.543	Sm II	10 h	4	-	4118.68	Br	-	[2]	Bl
4123.959	U	20 r	1	-	4121.527	Bi I	125 wh	50	-	4118.663	Ir	8	-	Ab
4123.951	Sm II	10	20	-	4121.473	Cr	10	1	-	4118.643	V I	9	3	-
4123.881	Nd	40	20	-	4121.46	O II	-	[50]	Mh	4118.60	Hf	3	1	Me
4123.872	Ce	25	6	-	4121.456	Zr I	30	2	-	4118.549	Fe	200	100	S
4123.813	Ru	20	10	-	4121.351	Sm II	15	15	-	4118.549	Mo	-	10	-
4123.810	Cb I	200	125	-	4121.319	Co I	1000 R	25	-	4118.546	Sm II	50	60	-
4123.78	Tb	10	-	-	4121.278	Ce	2	-	-	4118.498	Ru I	40	-	-
4123.778	Ni	2	-	-	4121.260	Cr	35	8	-	4118.481	Pr	250 d	50 d	-
4123.745	Fe	80	20	-	4121.230	U	3	3	-	4118.426	Tb	5	-	Kn
4123.71	As II	-	5	Ro	4121.210	Cs II	3	[15]	Ot	4118.394	U	3	8	-
4123.66	U	5	6	-	4121.07	Gd	3	1	-	4118.20	Tb	5	-	-
4123.657	Ta	5	1	-	4121.069	Ce	2	2	-	4118.192	Ce	3	-	-
4123.650	Mo	5	25	-	4121.01	Tb	5	-	-	4118.184	W	9 l	10 l	-
4123.617	Pd I	10	2	-	4120.989	He I	-	[5]	Ps	4118.182	V I	10	5	-
4123.59	Gd	3	-	Kn	4120.987	Ru I	25	30	-	4118.144	Ce	25	8	-
4123.572	Ti I	40	10	-	4120.96	Pr	3	1	-	4118.144	U	2	2	-
4123.569	Th	5	5	-	4120.89	Sb II	-	5	Dv	4118.14	Kr II	-	[30 whl]	Me
4123.566	V I	30 r	12 r	-	4120.857	W	9	8	-	4118.066	Ta	5	4 h	-
4123.543	Mn	15	5	-	4120.842	Er	8	-	-	4118.054	W	8	9	-
4123.534	Hf II	1	10	-	4120.829	Ce	25	6	-	4118.01	Dy	4	-	Ed
4123.505	Re	2	-	-	4120.812	He I	-	[25]	IMr	4117.987	Ce	3	1	-
4123.488	Ce	20	5	-	4120.798	Ce	4	-	-	4117.863	Fe I	6	1	-
4123.387	Cr	35	15	-	4120.78	P II	-	[15 h]	Gu	4117.826	Ce	4	1 h	-
4123.310	U	5	2 h	-	4120.77	V I	2	-	Me	4117.73	Eu	2 d	-	-
4123.306	Ti I	25	6	-	4120.697	Mo	8	-	-	4117.678	La	20	8	-
4123.287	Cu I	30 w	1 h	-	4120.69	U	3	1 h	-	4117.635	U	3	3	-
4123.279	Mn	12	5	-	4120.66	Dy	5	-	Kn	4117.596	Ir	50	3	-
4123.237	Er	5	-	-	4120.654	Nd	6	4	-	4117.586	Ce	30	5	-
4123.228	La II	500	500	-	4120.613	Cr I	40	10	-	4117.541	Nd	8	4	-
4123.188	V I	6	3	-	4120.6	Hg II	-	[50]	Ps	4117.456	U	3	-	-
4123.173	Ta	50 r	4 w	-	4120.55	O II	-	[20]	Fl	4117.45	Br	-	[20]	Bl
4123.143	Ti I	10	-	IKs	4120.538	V I	15	4	-	4117.288	Ce	20	4	-
4123.14	U	3	-	-	4120.52	Tb	12	2	-	4117.22	Tb	9	-	-
4123.069	Na II	10	[15]	Fr	4120.507	Ce	2	2	-	4117.21	Pr	3	1	-
4123.064	Ru I	25	35	-	4120.43	Tb	2	-	Kn	4117.210	Ir	2	3	Ab
4123.055	W	7	8	-	4120.27	O II	-	[50]	Mh	4117.09	P II	-	[50]	Gu
4123.053	Er	8	-	-	4120.211	Fe	80	35	-	4117.05	Dy	2 h	-	Ed
4123.010	Gd	8	10	-	4120.20	Ho	50	25	Kn	4117.013	Ce	30	-	-
4123.006	Sm	5	2	-	4120.188	Er	8	-	-	4117.008	F II	-	[30]	Di
4123.005	Nd	15	8	-	4120.177	I	-	[15]	Ke	4116.978	Eu	2 s	-	-
4122.98	Pr	8	2	-	4120.10	U	4	8	-	4116.896	Cb	10	10	-
4122.973	Th	3	5	-	4120.096	Mo	25	50	-	4116.887	U	10	8 h	-
4122.942	Eu	3	1	-	4120.034	Ti I	10	-	-	4116.858	Ru	7	-	-
4122.874	Yb	10	20	-	4120.00	Pr	8 d	2 dh	-	4116.85	Tb	3	-	-
4122.857	Ce	3	-	-	4119.987	Tb	15	-	-	4116.838	Ir	5	-	Ab
4122.808	Cb	5	10	-	4119.98	U	3	1	-	4116.791	I II	-	[3]	Ke
4122.791	In II	-	[30 h]	Ps	4119.877	Ce II	20 d	3	-	4116.764	Nd	10	10	-
4122.787	Ru	6	-	-	4119.85	As	-	50	Ro	4116.718	Th	12	15	-
4122.786	Eu	3	-	-	4119.826	Zr I	10	-	-	4116.713	Ce	6	1	-
4122.763	Re	10	-	-	4119.80	Pr	5	1	-	4116.703	V I	3	2	-
4122.510	Fe I	70	30	-	4119.724	Cb	1 h	20	-	4116.65	Br	-	[4]	Bl
4122.499	Sm II	5	10	-	4119.692	U	8	4	-	4116.649	Mn	15 h	5	-
4122.49	Lu	15	2	Me	4119.680	Rh I	100	25	-	4116.63	Ho	3	1 h	Kn
4122.47	Tb	8	-	-	4119.633	Mo	5	50	-	4116.585	Os	6	1	-
4122.395	Mo	15	50	-	4119.601	Ir	15	-	Ab	4116.547	F II	-	[50]	Di
4122.354	U	15	4	-	4119.569	Sm II	4	5	-	4116.51	Tb	8 W	-	-
4122.31	Pr	8	2	-	4119.49	Tb	6	-	-	4116.470	V I	20 r	15 r	-
4122.271	Co I	10 h	-	-	4119.457	V I	12	6	-	4116.456	Sm II	8	9	-
4122.237	Ce	3	3 l	-	4119.43	Yb	10	20	m	4116.437	U	3	3	-
4122.21	Tb	3	-	-	4119.394	Fe	2	1	-	4116.39	A II	-	[10]	Rt
4122.166	Ti I	40	10	-	4119.38	Zn II	-	[7]	Vs	4116.362	Er	4 d	-	-
4122.166	U	10	8	-	4119.380	Gd	8	-	Kn	4116.331	Rh I	30	10	-
4122.162	Cr I	30	5	-	4119.37	Pr	5	2	-	4116.27	Os	20	1 h	-
4122.145	Ce	-	2	-	4119.35	Ho	3	2 h	Ex	4116.178	I	-	[8]	Ke
4122.121	Hg	-	[20]	St	4119.343	Ce	-	2 h	-	4116.15	Si	-	2	Sy
4122.09	Pr	12	3	-	4119.33	Eu	10	3	m	4116.115	Xe I	-	[80]	I
4122.017	W	7	8	-	4119.329	Er	18 wl	2 wh	-	4116.097	U	25	35	-
4122.017	Sm	2	4	-	4119.325	Dy	15	4	-	4116.095	Ca	2	3	-
4121.95	B II	-	20	En	4119.29	Yb	4	-	-	4115.982	Ni I	6	-	-
4121.936	Nd	4	8	-	4119.288	Cs	-	[8]	Sv	4115.879	Ce	-	6 h	-
4121.908	Ce	3	-	-	4119.283	Cb	2	200	-	4115.83	Pr	12	5	-
4121.891	Th	-	3	-	4119.266	Ce	-	2 h	-	4115.806	Eu	6	-	-
4121.86	Xe II	-	[3 h]	Hu	4119.222	O II	-	[300]	Fl	4115.782	Mo	-	5 h	-
4121.855	Bi I	5	2	-	4119.219	F II	-	[50]	Di	4115.778	Ir	100	30	-
4121.817	Cr	40	10	-	4119.199	Gd	3	-	Kn	4115.773	Th	3	3	-
4121.81	Eu	2 w	-	Kn	4119.10	V I	2	2	Me	4115.657	Ce	3	-	-
4121.806	Fe I	100	40	S	4119.015	Ce	25	3	-	4115.645	U	10	-	-
4121.74	Cu I	20	-	-	4118.965	Mo	10	8	-	4115.597	Cb	-	5	-
4121.682	Rh I	150	50	-	4118.96	P II	-	[15]	Gu	4115.586	W	8	8	-
4121.671	Zr I	5	-	-	4118.913	Hf	3	-	-	4115.54	Eu	2	-	-
4121.642	Ti	15	3	-	4118.903	Fe I	2	1	-	4115.483	V I	2	1	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4115.48	In II	-	-	[2]	Ps	4112.622	Er	6	1	-	-	4110.11	Pr	3	1	-	-
4115.41	Hg II	-	-	[50]	Ps	4112.54	Tb	25	1	m	-	4110.073	Co I	5 h	-	-	-
4115.374	Ce	40	6	-	-	4112.503	U	4	2	-	-	4110.07	Tb	3	-	-	-
4115.37	Tb	8	1	-	-	4112.485	W	8	7	-	-	4110.053	Zr II	3	1	-	-
4115.353	Gd	25	-	-	-	4112.484	Ce	6	-	-	-	4110.027	Ce	3	-	-	-
4115.28	Se II	-	-	[10]	Bt	4112.481	Cb	2	-	-	-	4110.00	Br	-	-	[10]	Bl
4115.185	V I	30 r	20 r	-	-	4112.347	Fe I	6	1	-	-	4109.98	N I	-	-	[1000]	Du
4114.957	Fe	10	2	-	-	4112.332	V I	2	3	-	-	4109.98	Ca	2	-	-	Ad
4114.952	K II	-	-	[30]	Dm	4112.322	Th	3	5	-	-	4109.905	Ce	-	-	3 h	-
4114.95	Na II	-	-	15	So	4112.287	Ir	12	2	-	-	4109.900	Er	7 w	-	-	-
4114.928	Mo	10	12	-	-	4112.28	S	-	-	[3]	Hn	4109.89	Eu	2	-	-	-
4114.916	Ce	12	-	-	-	4112.259	Re	3 h	-	-	-	4109.875	Ba	2	-	-	-
4114.893	U	5	5	-	-	4112.257	Ce	-	2	-	-	4109.808	Fe I	120	100	-	-
4114.84	Pr	8	2	-	-	4112.252	Sm	10	2	-	-	4109.805	La I	15	10	-	-
4114.827	W	7	6	-	-	4112.174	Eu	15 w	2 w	-	-	4109.786	V I	40 r	20 r	-	-
4114.770	Ta	5	2 h	-	-	4112.173	Ce	2	-	-	-	4109.756	W	20	20	-	-
4114.680	Re	4	-	-	-	4112.14	Xe II	-	-	[15 whl]	Hu	4109.709	Xe I	-	-	[60]	I
4114.607	U	10	2 h	-	-	4112.127	Cb	5	15	-	-	4109.646	Ru I	20	6	-	-
4114.58	Eu	2	-	-	Kn	4112.120	Mo	4	3	-	-	4109.609	Yb	3	-	-	-
4114.575	Cb	-	5	-	-	4112.100	Ne I	-	-	[15]	Ps	4109.584	Cr I	40	10	-	-
4114.56	Rn	-	-	[80]	Rc	4112.085	Ce	3 l	-	-	-	4109.559	Ce	12	-	-	-
4114.530	V I	6	3	-	-	4112.071	K II	-	-	[15]	Dm	4109.54	Mg II	2	-	-	Fi
4114.52	A II	-	-	[2]	Rt	4112.055	Eu	10	2	-	-	4109.531	U	6	-	-	-
4114.458	Nd	2 h	-	-	Kn	4112.02	O II	-	-	[50]	Mh	4109.51	Tb	5	-	-	-
4114.449	Fe I	80	50	S	-	4112.018	Os	150	9	-	-	4109.485	La I	15	5	-	-
4114.384	Mn	20	20	-	-	4111.99	Ho	4	2 h	Kn	-	4109.455	Nd	30	30	-	-
4114.35	Se II	-	-	[40]	Bl	4111.98	Pr	3	1	-	-	4109.41	Pr	15	2	-	-
4114.31	Pr	3	1	-	-	4111.931	Ce II	8	1 h	-	-	4109.407	Sm II	10	10	-	-
4114.19	Ca	2	2	Ad	-	4111.88	Se I	-	-	[10]	Rd	4109.34	In II	-	-	[5 h]	Ps
4114.149	Ce II	12	2	-	-	4111.871	Pr	30 w	8 w	-	-	4109.23	Kr II	-	-	[100 hs]	Me
4114.14	Tb	12	1	-	-	4111.813	W	8	7	-	-	4109.20	Dy	2	-	-	Ed
4114.134	Ru I	20	5	-	-	4111.791	Nd	15	3 h	-	-	4109.19	P II	-	-	[70]	Gu
4114.09	Dy	12	4	Kn	-	4111.786	U	3	1	-	-	4109.173	F II	-	-	[100]	Di
4114.074	Er	12 w	-	-	-	4111.785	V I	100 WR	100 WR	-	-	4109.09	Pr	5	1	-	-
4114.00	N I	-	-	[30]	Du	4111.77	Gd	10	2	-	-	4109.087	Er	5	-	-	-
4113.997	Ce	2	3 h	-	-	4111.768	Ir	2	-	-	Ab	4109.08	Tb	2	-	-	-
4113.944	Cb	10	10	-	-	4111.67	Cr I	20 h	-	-	Ct	4109.073	Nd	15	15	-	-
4113.936	U	8	10	-	-	4111.597	Re	3	-	-	-	4109.072	Fe I	12	2	-	-
4113.896	Sm II	5	10	-	-	4111.59	Sn	-	-	[2]	Mc	4109.043	V I	3	-	-	-
4113.887	Pr	30 w	70 w	-	-	4111.56	S	-	-	[30]	Hn	4108.83	Se II	-	-	[800]	Bl
4113.876	Mn	20	5	-	-	4111.527	U	2	2	-	-	4108.729	Ce	8	-	-	-
4113.826	Nd	10 d	5 d	-	-	4111.440	Gd	15	15	-	-	4108.702	Cb	2	1 h	-	-
4113.82	O II	-	-	[15]	Mh	4111.394	Ce	35	5	-	-	4108.695	Mo	-	8 h	-	-
4113.771	Ce	2 l	-	-	-	4111.37	Ho	-	2 h	Ex	-	4108.63	Ho	100	40	-	Kn
4113.769	Gd	4	4 h	-	-	4111.36	Cr I	20 h	-	-	Ct	4108.624	Re	10	-	-	-
4113.73	Kr II	-	-	[8 whl]	Me	4111.351	Er	15	1	-	-	4108.543	Ce	2	-	-	-
4113.726	Ce II	30	3	-	-	4111.346	Dy	30	12	-	Kn	4108.57	Eu	4	-	-	Kn
4113.634	Ir	12	-	-	Ab	4111.34	Tb	12	-	-	-	4108.559	Ca I	6	3	-	-
4113.605	Mo	6	6	-	-	4111.202	Sb II	-	10	-	-	4108.551	Er	9	-	-	-
4113.6	bh Sr	5	-	-	L	4111.2	Tl	-	-	[2]	Cx	4108.531	W	8	9	-	-
4113.60	Te	-	-	[15]	Bl	4111.069	Eu	10	1	-	-	4108.475	U	4	4	-	-
4113.553	Ce	6	1	-	-	4111.028	Os	6	1	-	-	4108.467	Ir	4	2	-	-
4113.55	Eu	2	-	-	-	4111.017	U	10	-	-	-	4108.43	Kr I	-	-	[3]	Me
4113.531	Hf II	5	10	-	-	4111.01	Tb	2	-	-	-	4108.426	Th	15	15	-	Me
4113.525	U	2	2	-	-	4110.92	Pr	10	2	-	-	4108.42	Gd	4	2	-	Kn
4113.518	V I	20	9	-	-	4110.911	Cr I	20 Wh	-	-	-	4108.401	Zr I	20	-	-	-
4113.395	Re I	20	-	-	-	4110.903	Mn	80 r	40	-	-	4108.400	Cr I	30	4	-	-
4113.383	Ru	40	50	-	-	4110.899	Re I	40	-	-	-	4108.39	Tb	2	-	-	-
4113.381	Pr	3	-	-	-	4110.870	Th	8	8	-	-	4108.353	U	10	-	-	-
4113.332	Ce	3	-	-	-	4110.85	Tb	4	-	-	-	4108.34	Pr	15	3	-	-
4113.28	La II	10	20	Me	-	4110.840	Ce II	20	-	-	-	4108.323	Sm II	5	4	-	-
4113.27	Pb II	-	-	[4]	Gs	4110.832	Cb	-	5 h	-	-	4108.281	I I	-	-	[20]	Ke
4113.236	Mn	40	20	-	-	4110.830	U	8	8	-	-	4108.28	Dy	2	-	-	Ed
4113.210	Zn I	10	-	-	Hx	4110.802	Yt I	7	2 h	-	-	4108.255	Ce	8	1	-	-
4113.170	Ce	3	1 h	-	-	4110.79	O II	-	-	[40]	Mh	4108.232	Cs	-	-	[5]	Sv
4113.112	Nd	20 h	2	-	-	4110.77	Pb II	-	-	[5]	Gs	4108.215	V I	12	9	-	-
4113.107	U	12	12	-	-	4110.761	V I	2	2	-	Me	4108.208	Ir	4	3 h	-	-
4113.05	Yb	4	15	-	-	4110.704	Mo	6	5	-	-	4108.124	Mo	5	6	-	-
4113.05	Dy	12	2	-	Kn	4110.662	Zr I	4	-	-	-	4108.087	Ce	-	2	-	-
4113.03	Eu	2	-	-	Kn	4110.640	Th	5	5	-	-	4108.066	Hg I	20	5	-	-
4112.975	F II	-	-	[30]	Di	4110.607	Ce	2	-	-	-	4108.060	Ru	10	7	-	-
4112.966	Fe	70	10	-	-	4110.603	Gd	10	15	-	-	4107.974	Os	25	-	-	-
4112.964	Gd	5 h	-	-	-	4110.572	W	7	6	-	-	4107.960	Re	3	-	-	-
4112.88	Tb	9	-	-	-	4110.535	Co I	600	-	-	-	4107.955	Nd	4	8	-	-
4112.865	Ne I	-	-	[10]	Ps	4110.51	Sn II	-	-	[2]	Mc	4107.92	Tm	4	-	-	Me
4112.83	A	-	-	[20]	Rt	4110.472	Nd	10	10	-	-	4107.871	Mn	20	5	-	-
4112.762	Th	5	5 w	-	-	4110.47	Pr	5	1	-	-	4107.87	Eu	2	6	-	-
4112.745	Nd	15	-	-	-	4110.444	U	6	1 h	-	-	4107.865	Th	5	5	-	-
4112.741	Ru I	125	200	-	-	4110.431	Gd	5	-	-	-	4107.837	Ru	25	20	-	-
4112.74	Pr	10	2	-	-	4110.41	Xe II	-	-	[15]	Hu	4107.825	W	7	6	-	-
4112.734	F II	-	-	[20]	Di	4110.381	Ce	35	10 h	-	-	4107.823	Ir	10	2	-	-
4112.714	Ti I	70	20	-	-	4110.295	Cb	1	10	-	-	4107.804	Sm II	10 d	2	-	-
4112.694	Ne I	-	-	[20]	Ps	4110.287	Mo	3	5	-	-	4107.797	Ce	15	2 h	-	-
4112.67	Lu	5	-	-	Me	4110.185	Sm II	5	5	-	-	4107.79	Tb	6	-	-	-
4112.63	Ho	-	2 h	-	Ex	4110.16	Kr II	-	-	[5 whl]	Me	4107.754	Pr	15	5	-	-

4107.7—4098.9 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4107.744	Nd	2h	—	Kn	4104.823	Rb	—	3	Rr	4102.153	Mo	30	25	—
4107.755	Sr II	1	3	Sd	4104.80	Br	—	[2]	Bl	4102.073	Ce	2	—	—
4107.495	Zr I	10	—	—	4104.779	U	2	2h	—	4101.95	Dy	8	2	Kn
4107.492	Fe I	120	100	S	4104.778	V I	12	5	—	4101.905	U	18	1	—
4107.49	Rh I	25	8	—	4104.770	Sb	—	3	Sp	4101.847	W	7	8	—
4107.487	V I	10	9	—	4104.750	Co I	50	—	—	4101.773	In I	2000 R	1000 R	—
4107.468	Mo	30	40	—	4104.73	O II	—	[50]	Mh	4101.772	Ce	35	6	—
4107.45	Dy	4	—	Kn	4104.665	Rb	—	2	Rr	4101.745	Ru I	20	60	—
4107.421	Ce II	30	8	—	4104.636	Nd	8	5	—	4101.735	H I	—	[100]	m
4107.394	Sm II	5	5	—	4104.48	Pr	5	2	—	4101.682	Nd	8	—	—
4107.388	U	5	3	—	4104.440	U	2	2	—	4101.679	Fe I	5	2	—
4107.264	Sm II	9	5	—	4104.430	Co I	30	2	—	4101.667	Ir	3	—	Ab
4107.195	Ce	2	—	—	4104.425	Ce	30	1	—	4101.665	Zn	5	—	IHz
4107.16	Dy	6	2	Ed	4104.422	Re	30	—	—	4101.65	Tb	20 w	—	—
4107.129	Ir	3	—	Ab	4104.396	V I	15	7	—	4101.550	Ce	2	3	—
4107.11	Pr	10	1	—	4104.392	Th	10	10	—	4101.456	Nd	8	6	—
4106.931	U	25	10	—	4104.34	Er	3	—	—	4101.44	Eu	2	—	—
4106.915	Ce	10	—	—	4104.313	Rb II	—	20	—	4101.43	Dy	5	2	Kn
4106.88	Eu	10	8	—	4104.30	Ho	2	—	Kn	4101.357	Ce	1	2	—
4106.852	Ce II	12	2	—	4104.242	Ta	6	5	—	4101.319	U	2	2 h	—
4106.842	Re	10	—	—	4104.235	Ir	20	2	—	4101.315	Sm	15 d	2 h	—
4106.702	W	6	7	—	4104.233	Hf	8	4	—	4101.274	Fe I	40	10	—
4106.70	Dy	8	2	Kn	4104.227	Nd	10	4	—	4101.232	Ru	7	2 h	—
4106.661	Er	12 d	—	—	4104.226	Cu I	30	1 h	—	4101.157	Cr	30	2	m
4106.652	Ce	—	2	—	4104.169	Cb	3	30	—	4101.093	Er	3	—	—
4106.6	Ho	2	—	Kn	4104.128	Fe I	100	25	—	4101.09	Ho	40	40	Kn
4106.596	Sm II	100	5	—	4104.121	Sm II	5	10	—	4101.07	Te	—	[50]	Bl
4106.582	Nd	25	15	—	4104.1	bh Ca	4	—	L	4101.01	La II	2	2 h	Me
4106.58	Hf	10	2	—	4103.91	A	—	[200]	Rt	4101.003	V I	5	7	—
4106.50	Ho	4	1 h	Kn	4103.90	Tb	30	2	—	4100.933	Hf	10	1	—
4106.444	Re	15	—	—	4103.88	Eu	5	—	—	4100.923	Cb I	300 w	200 w	—
4106.439	Fe I	10	2	—	4103.878	Dy	30	4	Kn	4100.90	Tb	50 d	2	—
4106.416	U	8	12	—	4103.871	F II	—	[50]	Di	4100.895	W	7	6	—
4106.41	Br	—	[5]	Bl	4103.87	Hg	—	[50]	Ps	4100.889	Ce	8	1	—
4106.39	Dy	8	—	Kn	4103.84	Ho	400	400	Kn	4100.834	Th	18	18	—
4106.388	Yt I	8	—	—	4103.806	Er	12	2	—	4100.746	Pr	200	50	—
4106.35	Tb	5	—	—	4103.801	Yt	7	—	—	4100.743	Fe I	80	30	—
4106.345	Eu	3	—	Kn	4103.779	Re	2 h	—	—	4100.71	Eu	2	—	Kn
4106.284	U	8	—	—	4103.753	Mo	5	5	—	4100.563	Er	15	1	—
4106.276	Sm	5	—	—	4103.730	Ce	4	—	—	4100.398	Cb	15	20	—
4106.265	Fe I	6	1	—	4103.724	F II	—	[50]	Di	4100.373	Ru	12	10	—
4106.175	Cb	4	3	—	4103.72	Tm	5	10	Me	4100.350	Th	8	5	—
4106.134	Ce	30	2	—	4103.667	Ir I	10	3	Ab	4100.34	Xe II	—	[10]	Hu
4106.022	Cr	12	1	—	4103.65	Sm	3	2	—	4100.333	Sc I	5	1	—
4106.01	Tb	6	—	—	4103.616	Os	20	3	—	4100.322	Mo	—	20	—
4105.991	Th	8	8	—	4103.549	Mn	12	10	—	4100.30	Ne II	—	[5 h]	Bn
4105.97	Dy	5	—	Ed	4103.525	F II	—	[300]	Di	4100.300	Os	60	3	—
4105.912	Ru I	12	2	—	4103.463	Mn	12	8	Fu	4100.261	Gd I	5	5	—
4105.888	U	4	5	—	4103.46	Tb	8	—	—	4100.25	Eu	2	—	—
4105.863	Sb II	—	12	—	4103.448	Ce	4	—	—	4100.240	Nd	10	8	—
4105.85	Ho	2	—	Kn	4103.41	Eu	2 W	3	Kn	4100.22	Pr	15	10	—
4105.84	Tm	300	30	Me	4103.410	Gd	5 h	—	—	4100.2	Ho	4	—	Kn
4105.84	Yb	10	—	—	4103.4	air	—	20	m	4100.166	Fe	10	1	—
4105.83	Eu	2	2	m	4103.37	Tb	30	—	Kn	4100.148	Ir	100	3 h	—
4105.79	Gd	3	1 h	Kn	4103.312	Dy	50	50	Kn	4100.0	He II	—	[2]	Ps
4105.755	Ir	15	2	—	4103.311	Er	18	1	—	4099.954	Sm	4	—	—
4105.733	Pr	4	2	Kn	4103.30	Ho	3	3	Ex	4099.94	N I	—	[150]	Du
4105.712	U	3	3	—	4103.217	F II	—	[30]	Di	4099.930	U	5	5	—
4105.625	Ce	—	2	—	4103.21	Tb	—	—	Kn	4099.886	Dy	6	2	Kn
4105.62	Tm	6	—	—	4103.20	Pr	2	1	—	4099.88	Pr	4	1	—
4105.6	Ho	—	2 h	Ex	4103.118	U	18	1 h	—	4099.796	V I	25	12	—
4105.595	Nd	8	3	—	4103.10	Xe II	—	[5 h]	Hu	4099.749	Ce	12	5	—
4105.526	Mo	10	10	—	4103.085	F II	—	[150]	Di	4099.72	Eu	12 d	—	—
4105.495	Ce	2	—	—	4103.01	O II	—	[50]	Fl	4099.71	Kr II	—	[3]	Me
4105.47	Br	—	[2]	Bl	4102.965	Mn	100	20	—	4099.542	La II	100	100	—
4105.42	Os	6	—	—	4102.946	Si I	12	10	—	4099.482	Ir	4	—	Ab
4105.38	Tb	15	1	—	4102.883	I	—	[10]	Ke	4099.47	A II	—	[5]	Rt
4105.365	Mn	50	20	—	4102.865	U	5	6	—	4099.46	Tb	25 w	1	—
4105.343	Th	12	12	—	4102.724	Ce	2	1	—	4099.44	S	—	[8]	Hn
4105.343	Ce	2	—	—	4102.72	Eu	10	3	—	4099.387	Ce	6	—	—
4105.311	U	10	3	—	4102.715	Ti	3	1	—	4099.313	Zr I	10	—	—
4105.203	Ir	25	2	—	4102.704	W	35	30	—	4099.27	Pd I	—	4 h	Sh
4105.167	V I	20 r	12 r	—	4102.563	Nd	10	5	—	4099.269	U	20 r	1	—
4105.167	Mo	15	20	—	4102.53	Br	—	[10]	Bl	4099.21	Dy	4	—	Ed
4105.083	Dy	10	4	—	4102.52	Tb	25 w	2	—	4099.172	Ti I	25	8	—
4105.051	Dy	12	8	—	4102.40	Ho	—	3	Ex	4099.14	Tb	9	1	—
4105.021	Ta	—	[125]	Fl	4102.376	Yt I	150	30	—	4099.083	Zr	3	1	—
4105.001	O II	40	3	—	4102.364	Ce	18	2	—	4099.072	Cb	5	5	—
4104.996	Ce	—	—	—	4102.3	bh Sr	2	—	L	4099.05	Eu	8 d	—	—
4104.986	Gd	5	—	—	4102.285	Ru I	15	10	—	4099.029	Ca	2 h	1	—
4104.95	Fe	4 h	4 h	—	4102.281	Zr	10	—	—	4099.026	W	7	6	—
4104.95	Xe II	—	[20]	Hu	4102.21	U	1	4	—	4099.016	Cr	30	8	—
4104.945	U	6	—	—	4102.18	N	—	[5]	Du	4098.981	Ce	15	1	—
4104.877	La I	40	2	—	4102.159	V I	30	15	—	4098.953	Sm	8	—	—
4104.867	Cr	35	8	—	4102.159	Re	4 h	—	—	4098.939	Th	10	10	—
4104.86	Pr	4	1	—										

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4098.936	Nd	8	8	-	4095.97	Pr	3	1	-	4092.53	Cl	-	[8]	Bl
4098.912	Gd	100	100	-	4095.945	Co I	3	-	-	4092.43	Dy	-	-	Ed
4098.904	Pd I	2	-	-	4095.936	Cb	3	10	m	4092.407	V I	15	6	-
4098.89	Xe II	-	[50 h]	Hu	4095.93	Eu	2	-	-	4092.397	W	5	4	-
4098.83	Tb	3	-	-	4095.90	Tb	8	-	-	4092.391	Co I	600 W	15	-
4098.77	Ne II	-	[50]	Bn	4095.819	Ce	6	-	-	4092.388	Mn	30	20	-
4098.743	Mo	20	20	-	4095.778	Nd	5	3	-	4092.287	Fe	6	1	-
4098.74	Cl	-	[8]	Bl	4095.746	U	18	25	-	4092.286	U	2	1 h	-
4098.73	La II	-	4	Me	4095.701	W	12	15 w	-	4092.261	Pt I	4	1	-
4098.72	Kr II	-	[250]	Me	4095.63	O II	-	[10 h]	Fl	4092.257	Sm II	10	25	-
4098.65	Pr	8	3	-	4095.577	U	4	5	-	4092.19	Tb	12	-	-
4098.613	Gd	25 h	6	-	4095.556	Cb	4	3	-	4092.174	Cr	25	2	-
4098.60	Tb	2	2	-	4095.493	Hf	5	1	-	4092.085	Ca	10	1	-
4098.533	Ca I	15	3	IWg	4095.486	V I	40	15	-	4091.95	Se II	-	[70]	Bl
4098.513	Nd	10	5	-	4095.448	Ce	8	-	-	4091.945	V I	8	5	-
4098.490	W	4	3	-	4095.420	Nd	5 d	5	-	4091.88	Xe II	-	[2 h]	Hu
4098.466	Ce	4	-	-	4095.318	Mo	2	3	-	4091.852	Ce	6	-	-
4098.410	Pr	20	12	-	4095.248	Mn	15	15	-	4091.837	U	3	4	-
4098.40	Cl	-	[12]	Bl	4095.113	Ce	8	-	-	4091.817	Os	100	12	-
4098.339	Sc I	6	-	-	4095.110	Ir	3	-	Ab	4091.77	Dy	8	4	Kn
4098.24	O II	-	[5 h]	Mh	4095.093	Cb	4	3 h	-	4091.770	Er	6	-	-
4098.218	Cb	5	5	-	4095.053	Mn	12	5	-	4091.754	Gd	5 h	-	Kn
4098.187	Fe I	100	40	-	4094.970	Pr	50	12	-	4091.75	Eu	2	-	Ed
4098.183	Mo	20	15	-	4094.930	Ca I	15	7	IWg	4091.642	Ta	2	-	-
4098.18	Cr I	20 h	-	Ct	4094.908	Mo	-	30	-	4091.636	U	12	-	-
4098.175	Nd	15	5	-	4094.90	Eu	6 d	-	-	4091.591	Ce	3	-	-
4098.153	Ce	8	-	-	4094.893	U	8	8	-	4091.562	Fe I	8	3	-
4098.103	Er	8	-	-	4094.881	Ir	8	-	Ab	4091.533	Dy	9	4	-
4098.10	Os	9	3	-	4094.837	Sc I	8	6	-	4091.53	P II	-	[30 1]	Gu
4098.04	Gd	10	-	Kn	4094.751	Th	15	15	-	4091.52	U	6	12	m
4098.034	U	12	12	-	4094.68	Pb	-	5	Sx	4091.50	Yb	2	5	m
4097.96	Cr I	20	-	Ct	4094.656	Er	6	-	-	4091.41	Tb	4 d	-	-
4097.91	Se II	-	[60]	Mz	4094.623	U	6	5	-	4091.33	Tb	3	-	m
4097.88	Br	-	[2]	Bl	4094.615	Nd	8	2	-	4091.260	Ta	4	10	-
4097.87	Sb II	-	4	Dv	4094.591	Ce	2	-	-	4091.218	W	4	3	-
4097.86	Yb	2	8	-	4094.491	Gd	25	15	-	4091.112	Pr	3	-	-
4097.791	Ru I	25	125	-	4094.467	Mo	5	4	-	4091.062	Ru	20	20	-
4097.751	Th	5	-	-	4094.45	Tb	10	5	m	4091.058	Ce	3	-	-
4097.745	U	10	1	-	4094.43	P	-	[30]	Gu	4091.04	W	5	3	-
4097.708	Mo	3	2	-	4094.347	Mo	3	2	-	4090.993	Nd	5 d	5	-
4097.686	Th	5	3	Fd	4094.312	Ce	-	2	-	4090.973	Ir	3	-	Ab
4097.670	W	6	5	-	4094.309	Eu	4	1 h	-	4090.953	Mo	-	20	-
4097.65	Cr I	20 h	-	Ct	4094.3	Rn	-	[10]	Wa	4090.947	Ce II	6	2	-
4097.642	Cb	4	3 h	-	4094.283	V I	10	5	-	4090.877	Mo	10	20	-
4097.617	Ce	2	-	-	4094.266	Zr I	30	1	-	4090.863	Sb	-	2	Sp
4097.521	Rh I	25	10	-	4094.199	Ce	3	-	-	4090.794	Zr I	25	2	-
4097.45	Tb	20	5	-	4094.18	Tm	300	30	Me	4090.775	Ce	-	2	-
4097.400	U	1	2	-	4094.042	Sm II	10	10	-	4090.771	Er	9	-	-
4097.339	Th	5	3	-	4094.04	Tb	7	-	-	4090.770	Eu	3	-	-
4097.338	Ce	4	-	-	4093.994	U	12	3 h	-	4090.769	Os	3	3	-
4097.250	Ir	3	-	Ab	4093.955	Ce	20	3	-	4090.747	Gd	5	-	Kn
4097.24	O II	-	[70]	Mh	4093.79	Pr	8	1	-	4090.74	Pr	15	8	-
4097.24	Dy	2	-	Ed	4093.776	Ru	5	1	-	4090.639	W	6	5	-
4097.24	Hf II	4	10	-	4093.725	Gd	15	15	-	4090.62	Br	-	[5]	Bl
4097.203	Co I	2	-	-	4093.697	K II	-	[20]	Dm	4090.606	Mn	12	5 s	-
4097.2	Bi II	4	3	MI	4093.647	Dy	5	-	Kn	4090.579	V I	60	25	-
4097.188	Ta	5	3 h	-	4093.634	Ir	2	-	Ab	4090.513	Zr II	15	10	-
4097.15	A II	-	[5]	Rt	4093.61	U	3	1	-	4090.466	Ce	15	1	-
4097.112	Fe I	4	1	-	4093.513	I	-	[10]	Ke	4090.422	Gd I	100	20	-
4097.026	Ru I	15	15	-	4093.497	V I	9	5	-	4090.407	La I	3	-	-
4096.98	Cl	-	[6]	Bl	4093.394	Th	10	8	-	4090.399	Dy	4	-	Kn
4096.97	Fe	2	-	-	4093.35	Tb	2	-	-	4090.370	U	6	1	-
4096.939	V I	7	2	-	4093.285	Ce	15	-	-	4090.354	Co I	20 h	-	-
4096.926	Ce	-	2	-	4093.285	U	1	2	-	4090.308	W	4	2	-
4096.926	Er	8	-	-	4093.163	Zr I	12	-	-	4090.305	Cr	30	15	-
4096.839	Er	8	-	-	4093.161	Hf II	25	20	-	4090.29	Tm	10	3	-
4096.837	Ce	2	2	-	4093.161	Mo	5	5	-	4090.20	Eu	6 d	-	Kn
4096.822	Pr	30	15	-	4093.143	W	5	4	-	4090.164	Cb	5	5	-
4096.815	Eu	15	2	-	4093.133	Sc I	6	8	-	4090.135	Er	6 d	-	-
4096.810	Mo	20	15	-	4093.10	Nd	2	2 h	Ex	4090.135	U	25	40	-
4096.78	Dy	6	-	Ed	4093.053	Co I	10	-	-	4090.13	Tb	2	-	-
4096.706	U	6	3	-	4093.042	Sm II	3	3	-	4090.077	Fe I	2	-	-
4096.705	Nd	10	3	-	4092.95	Eu	5	-	Kn	4090.071	Pd I	4	-	-
4096.632	Zr II	10	2	-	4092.94	O II	-	[80]	Fl	4089.938	Mn	80	20	-
4096.56	Ag	-	5 h	-	4092.901	Er	6	-	-	4089.916	Re I	25	-	-
4096.53	O II	-	[30]	Mh	4092.85	Pr	5	2	-	4089.87	Pr	5	2	-
4096.424	W	2	5	-	4092.848	Co I	25	10	-	4089.87	As II	-	3	Ro
4096.38	Tb	2	-	-	4092.715	Ce II	18	2	-	4089.855	Ce	6	-	-
4096.352	U	20	5	-	4092.712	Gd I	100	40	-	4089.745	Eu	9	1 h	-
4096.342	Pr	20	8	-	4092.694	V I	20	12	-	4089.743	Zr	12	10 h	-
4096.131	Nd	10	8	-	4092.652	Nd	4	-	-	4089.742	Ce	6	-	-
4096.13	Br	-	[5]	Bl	4092.633	Ca I	15	2	IWg	4089.731	Mo	6	6	-
4096.109	Dy	15	2	Kn	4092.63	Pr	15	5	-	4089.73	Br	-	[8]	Bl
4096.099	Ce	4	-	-	4092.610	Ir	60	20	-	4089.685	Yb	50	7	-
4095.976	Fe I	80	40	-	4092.6	bh Sr	4	-	L	4089.678	Nd	10	4	-

4089.6—4081.0 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4089.639	Ir	15	2	Ab	4086.714	La II	500	500	—	4083.74	Dy	4	—	Kn
4089.612	La I	40	5	—	4086.713	Er	8 s	—	—	4083.714	W	6	5	—
4089.55	I II	—	[3]	Bl	4086.69	Ne II	—	[5]	Bl	4083.713	Yt I	50	10	—
4089.511	Dy	7	—	Kn	4086.674	U	8	1	—	4083.707	Gd	10	5	—
4089.51	Tb	10	1	—	4086.673	Sc I	10	8 wh	—	4083.67	Ho	3	—	Ex
4089.47	Pr	3	1	—	4086.632	Cb	3	2	—	4083.637	Ce	6	2	—
4089.43	Re	2 h	—	—	4086.60	Tb	15	—	—	4083.632	U	2	1	—
4089.399	Cb	—	5	—	4086.520	Th	12	12	—	4083.628	Mn	80	60	—
4089.385	W	6	5	—	4086.424	Ce	8	2	—	4083.594	Re I	25	—	—
4089.371	U	4	—	—	4086.422	Eu	4	—	—	4083.554	Fe I	10	2	—
4089.33	Tb	20	1	—	4086.383	U	2	2	—	4083.482	Ce	6	1	—
4089.27	O II	—	[60 h]	Mh	4086.307	Co I	400	15	—	4083.474	Th	3	—	—
4089.25	P	—	[30]	Gu	4086.24	Pr	25	2	—	4083.372	Re I	25	—	—
4089.222	Fe I	10	2	—	4086.151	Ni	4	—	—	4083.352	Hf	10	2	—
4089.20	Br	—	[5]	Bl	4086.145	U	5	6	—	4083.336	Pr	20	20	—
4089.157	Ce	4	—	—	4086.072	Ce	3	—	—	4083.24	Au II	5	8	—
4089.134	Th	3	—	—	4086.030	Sc I	3	—	—	4083.233	Ce	35 d	5	—
4089.061	W	2	1	—	4086.025	Mo	15	15	—	4083.225	Sm II	5	5	—
4089.009	Ce II	6	—	—	4086.000	Fe	2	—	—	4083.215	Mn	1	2	—
4089.006	Re	2 h	—	—	4085.998	Ce	3	—	—	4083.21	Tb	9	—	—
4088.88	Si	—	3	Sy	4085.987	Cr	8	—	—	4083.162	Ce	8	—	—
4088.87	Pr	4	2	—	4085.931	Ir	15	15 h	Ab	4083.109	Dy	4	—	Kn
4088.851	Ce	15	2	—	4085.907	Sb II	—	6	—	4083.083	Zr I	10	—	—
4088.846	U	6	6 h	—	4085.871	Ag	—	25	—	4082.98	Yb I	3	—	Me
4088.82	Ca	2	3	Ad	4085.815	Nd	10	6	—	4082.972	W	12	15	—
4088.804	Gd	6	—	—	4085.797	Ta	5	80 W	—	4082.962	Ce	4	—	—
4088.793	Eu	3	—	—	4085.748	Ce	8	—	—	4082.948	U	8	—	—
4088.790	Nd	10	2	—	4085.664	Zr I, II	25	2	—	4082.944	Mn	80	60	—
4088.770	W	7	7	—	4085.658	V	—	10 h	Me	4082.927	V I	15	6	—
4088.746	Sm	5	1 h	—	4085.648	Gd	100	80	—	4082.794	Ru	15	10	—
4088.660	Mo	5 h	5 h	—	4085.579	Co I	2 h	1	—	4082.79	Tb	8	—	—
4088.64	Tb	4	—	—	4085.520	Mo	10 h	6 h	—	4082.78	Pr	10	2	—
4088.583	Ce	8	1	—	4085.51	Eu	3	—	—	4082.78	Rh I	100	50	—
4088.577	Fe	7	2	—	4085.429	Ru I	40	50	—	4082.68	Hf II	2	2	—
4088.554	Nd	5	1	—	4085.422	Th	5	1	—	4082.639	U	6	8	—
4088.50	Rh I	5	4	m	4085.388	Eu	10 l	2	—	4082.62	B	—	2	Sy
4088.442	Os	100 h	3	—	4085.344	Dy	10	2	Kn	4082.602	Co I	50	—	—
4088.37	Ac	—	100	Lx	4085.34	Pr	15	8	—	4082.589	Sm II	10	25	—
4088.360	Ru	10	1	—	4085.332	Cb	1	5 h	—	4082.584	Nd	10	10	—
4088.35	Pr	3	1	—	4085.324	Fe I	100	70	—	4082.57	As II	—	15	Ro
4088.333	W	12	10	—	4085.232	Ce II	20	5	—	4082.462	Ti I	60	25	—
4088.33	Kr II	—	[500]	Me	4085.15	Nd	4	—	Ex	4082.429	Nd	15	15	—
4088.299	Co I	50	—	—	4085.140	Dy	8	2	Kn	4082.40	A	—	[30]	Rt
4088.254	U	25	18	—	4085.13	Pr	4	2	—	4082.396	Sc I	25	10	—
4088.199	Zr	4	—	—	4085.12	O II	—	[70]	Fl	4082.377	Ir	25	3	—
4088.15	Cl	—	[6]	Bl	4085.036	Th	15	15	—	4082.295	Zr I	5	—	—
4088.123	Ce	3	—	—	4085.03	Eu	8	1	—	4082.28	N II	—	[5 h]	Fl
4088.034	Re I	3	—	—	4085.021	Cr	15	1	—	4082.263	Th	10	8	—
4088.0	Rn	—	[10]	Wa	4085.008	Fe I	80	30	—	4082.23	Tb	5	1	—
4087.959	Hf	6	1	—	4084.93	U	6	8	—	4082.117	Fe I	10	2	—
4087.86	Eu	8	—	Kn	4084.89	Eu	3	—	—	4082.116	Mo	3	2	—
4087.79	Rh	3	4	—	4084.87	Ba I	3	—	Fl	4082.100	Ce	6	—	—
4087.743	Mo	3	4	—	4084.860	Cb	10	10	—	4082.052	W	3	4	—
4087.709	Gd	80	100	—	4084.83	Tb	7	—	—	4082.003	U	5	6	—
4087.70	Tb	8	1	m	4084.783	Ce	3	1 h	—	4081.963	Sm II	6	5	—
4087.689	Zr I	12	1	—	4084.74	Pr	10	5	—	4081.901	Pr	75	30	Kn
4087.65	Ho	4	2	Kn	4084.69	Gd	10	—	—	4081.853	Ce	2	—	—
4087.638	Er	20	1	—	4084.66	O II	—	[30]	Mh	4081.83	Dy	5	2	Ed
4087.609	Eu	2	—	—	4084.646	Ce	3	—	—	4081.813	Rh I	2	—	—
4087.566	Ce	8	2	—	4084.501	Ca I	2	2	—	4081.764	Mo	5	5	—
4087.52	Rh I	3	—	—	4084.499	Fe I	120	80	—	4081.74	Ca	2	4	Ad
4087.471	Nd	10	2	—	4084.403	Sm II	80	—	Kn	4081.737	Cr	25	2	—
4087.463	Mo	3	3	—	4084.383	Mo	40	40	—	4081.716	Ce	2	—	—
4087.394	W	6	6	—	4084.35	Pd I	5 h	—	Sh	4081.666	Pd I	2	—	—
4087.390	U	6	12	—	4084.3	bh Ca	5	—	L	4081.615	Ce	6	—	—
4087.388	Dy	6	—	Kn	4084.298	Zr I	30	1	—	4081.54	Pr	5	1	—
4087.377	Ba	3	—	—	4084.285	Rh I	2	2	—	4081.474	Pt	3	1 h	—
4087.360	Ce II	6	—	—	4084.268	Nd	5	—	—	4081.471	Cs	—	[10]	Sv
4087.35	Ho	4	—	Kn	4084.25	Tb	10	—	—	4081.438	Mo	50	50	—
4087.344	Sr I	12 h	—	ISn	4084.197	Ce	3	—	—	4081.428	Re I	30	—	—
4087.343	Pd I	500	100	—	4084.177	Cb	3	3	—	4081.40	I II	—	[3 h]	Bl
4087.332	Gd	5	—	—	4084.13	As II	—	15	Ro	4081.397	Ir	15	2	—
4087.303	Ce II	8	—	—	4084.12	Au I	25	12	—	4081.388	Th	8	3	—
4087.213	Dy	15	4	—	4084.113	Co I	2	—	m	4081.333	Ba	2	—	—
4087.206	Pr	50	3	—	4084.094	U	10	2	—	4081.298	W	2	25	—
4087.163	Sc I	10	1	—	4084.01	Mo	—	5	—	4081.263	U	10	4	—
4087.14	O II	—	[40 h]	Mh	4083.95	Gd	5	—	Kn	4081.237	Er	10 s	1	—
4087.106	Eu	4	1 h	—	4083.927	Rb II	—	12	Rr	4081.23	Tb	30	1	—
4087.103	Ce	3	—	—	4083.919	F II	—	[40]	Di	4081.223	Yt I	6	3	—
4087.103	Fe I	50	5	—	4083.918	Nd	4 d	2	—	4081.222	Ce	40	8	—
4086.957	W	1	4	—	4083.91	O II	—	[40 h]	Mh	4081.215	Zr I	150	7	—
4086.957	Ir	2	—	Ab	4083.84	I	—	[8]	Bl	4081.20	Hg II	—	[10]	Ps
4086.93	Tb	3	—	—	4083.780	Fe I	15	2	—	4081.078	Mo	—	30	—
4086.90	Kr I	—	[2]	Me	4083.772	U	3	1	—	4081.042	Eu	5	1 h	—
4086.768	Ce	3	—	—	4083.77	Ba II	—	[5]	Rs	4081.018	Pr	50	25	—

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4080.93	Ba I	2	3	Fl	4077.977	V I	2	-	-	4075.272	Nd	12	4	-
4080.926	Yt I	5	4	-	4077.974	Dy	150 r	100	Kn	4075.254	Mn	25	5	-
4080.687	Fe	5	1	-	4077.97	Tb	25	2	-	4075.246	Mo	25	25	-
4080.781	Gd	5h	-	-	4077.970	Er	20 s	18 s	-	4075.23	Tb	8	1	-
4080.772	Eu	7	-	-	4077.811	Hg I	150	150	-	4075.173	Ce	2	-	-
4080.707	Th	8	3	-	4077.786	U	15	6	-	4075.116	Nd	15	10	-
4080.67	A	-	[10]	Rt	4077.721	Ta	4	2 h	-	4075.085	U	2	2	-
4080.609	U	12	20	-	4077.72	Sn	2	3	-	4075.046	Zr I	7	-	-
4080.600	Ru	125	300	-	4077.716	Cu	5	-	-	4074.976	Sc I	10	3	-
4080.553	Ce	6	1	-	4077.714	Sr II	400 r	500 W	ISn	4074.931	Zr I	12	1	-
4080.553	Cu I	30 w	-	-	4077.69	Pr	4	2	-	4074.897	Ni I	10	-	-
4080.547	Sm II	15	10	-	4077.682	Mo	8	10	-	4074.89	C II	-	40	Fl
4080.539	Rh I	2	2	-	4077.677	Cr	30	10	-	4074.863	Cr	25	10	-
4080.534	Gd I	10	10	-	4077.620	Nd	8	3	-	4074.84	Pr	5	1	-
4080.51	Eu	2	-	Kn	4077.61	Pb	-	2	Sx	4074.791	Fe I	80	40	-
4080.48	Ne II	-	[15 h]	Bn	4077.57	Rh I	5	4	-	4074.692	Yb	-	2	-
4080.479	Ir	5	-	Ab	4077.470	Ce II	18	4	-	4074.682	Os	80	6	-
4080.442	Hf II	15	15	-	4077.406	Co I	100 wh	2 h	-	4074.651	Ce II	6	-	-
4080.436	Ce II	8	2	-	4077.366	Yt I	50	40	-	4074.65	Pr	3	1	-
4080.37	Dy	3	-	Ed	4077.35	Dy	4	-	Kn	4074.558	Ce	2	-	-
4080.227	Nd	20	10	-	4077.340	La II	600	400	-	4074.53	C II	-	50	Fl
4080.221	Fe I	60	10	-	4077.27	Yb	30	100	m	4074.514	Eu	4 d	-	Bl
4080.221	Cr	15	1	-	4077.153	Ti I	18	2	-	4074.49	Br	-	[4]	-
4080.148	Ne I	-	[50]	Ps	4077.150	Nd	10	4	-	4074.488	U	10	10	-
4080.1	bh Sr	2	-	L	4077.089	Cr	35	10	-	4074.438	Mo	-	20	-
4080.04	P	-	[150]	Gu	4077.088	Cb	3	5	-	4074.416	Nd	8	3	-
4080.025	Ce	5	-	-	4077.08	As	-	10	Ro	4074.368	Gd	2 h	-	-
4079.901	I II	-	[5]	Mu	4077.059	W	6	5	-	4074.364	W	50	45	-
4079.897	Ir	25	-	Ab	4077.046	Zr II	3	1	-	4074.362	Ti I	15	1	-
4079.88	Cl II	-	[15]	Ks	4076.96	A	-	[10]	Rt	4074.354	Zr I	5	-	-
4079.847	U	1	2	-	4076.952	Eu	10	-	-	4074.34	Pr	3	-	-
4079.845	Fe I	80	40	-	4076.854	Sm II	10	5	-	4074.241	U	6	2	-
4079.829	Sm	20	1	-	4076.806	Ir	2 h	-	Ab	4074.19	Tb	6	-	Ed
4079.786	Pr	50	35	-	4076.803	Fe	8	1	-	4074.127	Ce	6	-	-
4079.785	W	4	3	-	4076.733	Ru I	60	25	-	4074.02	Dy	7	2	Kn
4079.729	Cb I	500 w	200 w	-	4076.72	U	8	10	-	4074.003	Er	7	-	-
4079.721	Ti I	40	7	-	4076.711	La II	15	5	-	4073.94	Tb	5	-	-
4079.667	Ce	15	-	-	4076.64	A	-	[20]	Rt	4073.94	Pr	5	1	-
4079.612	Th	5	3	-	4076.637	Fe I	80	50	-	4073.867	W	4	3	-
4079.60	A II	-	[20]	Rt	4076.632	Sm II	25	15	m	4073.775	Fe I	80	20	-
4079.595	Dy	8	-	Kn	4076.573	Co I	3 h	1	-	4073.771	Gd	100	50	-
4079.422	Mn	50	40	-	4076.553	Ir	25	-	Ab	4073.76	Eu	3	-	Kn
4079.363	Re	20	-	-	4076.530	Zr I	10	-	-	4073.75	Tb	9	2	m
4079.359	Ne I	-	[2]	Ps	4076.506	Mo	5	5	-	4073.735	Ce	30	3	-
4079.342	Mo	4	4	-	4076.502	Fe I	2	1	-	4073.650	Er	3 h	-	-
4079.277	Ru I	12	5	-	4076.375	Ti I	15	1	-	4073.62	Os	6	3	-
4079.277	Ce	6	-	-	4076.370	Ir	2	2	-	4073.57	Te	-	[300]	Bl
4079.27	Dy	6	-	Kn	4076.352	Yt	30	8	-	4073.554	U	8	-	-
4079.257	W	6	3	-	4076.33	Au II	4	25 w	-	4073.52	Eu	3 l	-	Kn
4079.241	Mn	50	40	-	4076.237	Ce	12	1	-	4073.50	Xe II	-	[8]	Hu
4079.207	Bi II	2 h	[40 w]	Om	4076.225	U	2	3	-	4073.477	Ce	50	8	-
4079.189	Ta	10	4	-	4076.222	Fe I	2	1	-	4073.450	Fe II	8	8	Do
4079.178	La I	25	3	-	4076.21	Pr	10	1	-	4073.27	Cu I	15	-	Ex
4079.170	Ir	3	-	-	4076.194	Mo	25	25	-	4073.212	Gd	80	80	-
4079.15	Tb	4	-	-	4076.132	Co I	70	-	-	4073.16	Tb	10	1	m
4079.135	Cb	1 h	3 w	-	4076.093	Cb	4	3	-	4073.150	W	9	8	-
4079.016	Ce	15	1 h	-	4076.061	Cr	30	15	-	4073.13	Ho	3	2	Ex
4078.90	Ga	-	5	-	4076.01	Er	2	-	m	4073.120	Er	20	1	-
4078.85	O II	-	[70]	Mh	4076.01	Dy	2	-	Ed	4073.116	Ru	6	25	-
4078.827	U	3	8	-	4076.00	C II	-	80	En	4073.110	Dy	80	15	Kn
4078.820	Xe I	-	[100]	I	4075.984	Ru	5	25	-	4073.086	Cb	2	8	-
4078.78	Tb	5	-	m	4075.96	Eu	7	-	-	4073.062	Re I	5 h	-	-
4078.709	V I	2	-	-	4075.94	U	6	1 h	-	4073.04	N II	-	[5 h]	Fl
4078.709	Gd I	20	10	-	4075.937	Fe	5	5	-	4072.996	Ta	2	15 W	-
4078.606	Ce	5	-	-	4075.937	Mo	10	5	-	4072.917	Ce	20	2	-
4078.584	Sc I	10	10	-	4075.90	Tb	4	-	Ed	4072.913	Ni I	2	-	-
4078.515	Ce	5	1	-	4075.869	O II	-	[800]	Fl	4072.908	Cr	8	-	-
4078.474	Ti I	125	50	-	4075.850	Ce II	4 s	-	-	4072.830	U	8	2 h	-
4078.47	Tb	5	1	-	4075.835	Sm II	40	40	-	4072.704	Zr I	100	3	-
4078.465	Gd	15	10	-	4075.786	Ce	10	2	-	4072.684	Cr	12	1	-
4078.385	Sb	-	4	Sp	4075.74	P	-	[15]	Gu	4072.67	Tb	4	-	-
4078.381	Mo	5	3	-	4075.714	Ce	15	2	-	4072.667	Ce	2	-	-
4078.358	Fe I	80	40	-	4075.713	Th	5	1	-	4072.65	Dy	7	2	Kn
4078.352	Cb	4	3	-	4075.684	U	5	6	-	4072.630	Th	8	-	-
4078.321	Ce	15	4	-	4075.652	V	-	2	-	4072.549	Ce	2	-	-
4078.309	Zr I	10	-	-	4075.634	Ir	10	-	-	4072.52	Pr	10	2	-
4078.26	Tb	3	-	Ed	4075.616	Eu	2	-	-	4072.509	Fe I	2	1	-
4078.231	Eu	3	-	-	4075.588	Cu I	40	-	-	4072.40	In	-	200 wh	Sq
4078.16	Pr	5	1	-	4075.56	I I	-	[25]	Db	4072.40	A	-	[40]	Rt
4078.14	Zn II	-	[5]	Vs	4075.559	Nd	5 d	2	-	4072.386	Ir	10	3	-
4078.124	W	7	6	-	4075.541	Mo	20	20	-	4072.377	Er	10 d	3 wh	-
4078.124	Re	10	-	-	4075.538	Ce	2	-	-	4072.33	Tb	3	-	-
4078.074	Mo	4	4	-	4075.51	Br	-	[12]	Bl	4072.22	Pr	2	-	-
4078.00	Ho	3	3	Ex	4075.472	Gd	5	-	-	4072.156	O II	-	[300]	Fl
4077.98	Pr	10	2	-	4075.33	Pr	5	1	-	4072.141	V I	15	2	-

4072.1—4063.1 A.

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
		Arc	Spk., [Dis.]			Arc	Spk., [Dis.]			Arc	Spk., [Dis.]
4072.14	Tm	2	—	4069.154	W	7	6	4066.21	Tb	40	3
4072.13	P II	—	[30]	4069.13	Re	4 w	—	4066.194	Zr	3	—
4072.11	Se	—	[20]	4069.074	U	3	—	4066.182	Sm II	10	5
4072.10	Xe II	—	[4 h]	4069.049	Ne	—	[2]	4066.155	Ce	5	1
4072.068	Cb	—	15	4069.02	Eu	4	—	4066.124	Cb	3	—
4072.031	U	2	4	4069.01	Ca	—	3	4066.11	Gd	3	3 h
4072.01	A II	—	[150]	4069.003	Ti I	20 h	1 h	4066.09	Kr	—	[6 whl]
4072.01	I II	—	[2]	4068.991	Ce	3	—	4066.065	Eu	10	1
4071.99	Pr	5	1	4068.97	Eu	4	—	4066.01	Pr	18	3
4071.932	W	8	7	4068.967	U	4	6	4065.997	W	5	5
4071.9	Rb	—	[12]	4068.899	Nd	12	8	4065.941	Pt	5	2
4071.814	Ce	30	5	4068.836	Ce	25	4	4065.766	Nd	5	2
4071.79	Sn	—	[4]	4068.835	Ne I	—	[30]	4065.716	Cr	80	35
4071.740	Fe I	300	200	4068.804	Pr	40	15	4065.637	Gd	50 l	50 h
4071.64	As	—	10	4068.773	Cs II	—	[30]	4065.590	Ti I	12	2
4071.56	Os	30	3	4068.77	Gd	5	—	4065.580	La I	30	2
4071.541	V I	15	2	4068.719	Zr I	20	1	4065.553	Ce	2 l	—
4071.473	Ce	3	—	4068.695	U	2	4	4065.54	As II	—	10
4071.469	Ti I	8	1	4068.661	Ti I	10	1	4065.406	Eu	5	—
4071.398	Ru I	12	20	4068.544	Co I	150	100	4065.404	Pr	2	—
4071.387	Eu	5	—	4068.444	Ce	10 h	1 h	4065.400	Dy	7	—
4071.38	Pr	4	1	4068.366	Ru	40	60	4065.392	Fe I	15	6
4071.346	Ce	4	—	4068.357	Gd	10	—	4065.320	W	8	7
4071.30	Ca	—	2	4068.332	Er	5 s	—	4065.31	Sb II	—	3 h
4071.24	O II	—	[5]	4068.320	Sm II	40	40	4065.209	K II	—	[15]
4071.223	Hf II	2	4	4068.256	Cb	10 r	15 r	4065.164	Ce II	12	3
4071.211	Ti I	10	1	4068.176	U	6	—	4065.11	Kr II	—	[300]
4071.201	Eu	6	2 h	4068.144	Ti I	20	5	4065.101	Ti I	80	35
4071.19	Tb	6	—	4068.09	Pr	5	1	4065.1	C	—	[10]
4071.108	U	15	25	4068.057	Ce	3	—	4065.10	Ho	10	5
4071.091	Zr II	3	2	4068.05	Ho	6	2	4065.082	Mn	20	20
4071.080	Ce	20	2	4068.01	Ag	—	2 h	4065.08	Au I	50	30
4071.032	Dy	5	—	4068.003	Mn	50	20	4065.080	V	2	100
4071.013	Os	12	4	4067.982	Fe I	150	100	4065.065	Er	8	—
4071.000	Cr	15	4	4067.979	V I	10	9	4065.008	Sm II	7	3
4070.980	Sm II	5	3	4067.958	Cs II	—	[30]	4064.988	Yt II	8	7
4070.964	Cb	3	5	4067.908	Ta	100	40	4064.907	Ce II	8	—
4070.92	As	—	10	4067.839	Cr	30	4	4064.83	Tb	4	1
4070.897	Nd	4 d	1	4067.838	Hf	6	2	4064.829	Ne I	—	[15]
4070.890	U	6	1	4067.8	Ho	2	—	4064.810	Cb	4	3
4070.86	Sr I	3	—	4067.766	Ce	3	—	4064.793	Ce	3	1
4070.855	Os	20	4	4067.756	U	12	20	4064.789	W	15	12
4070.836	Ce	10	—	4067.745	V I	50	15	4064.783	La I	40	3
4070.779	Fe I	50	20	4067.727	Nd	2 h	1	4064.69	Cs	—	[10]
4070.777	U	2	4	4067.720	Mo	10	10	4064.67	Ca	—	2
4070.771	V I	10	5	4067.668	Sc I	5	—	4064.667	Mo	25	25 d
4070.748	I	—	[150]	4067.666	Th	8 w	5	4064.64	P II	—	[30]
4070.72	Tb	4	—	4067.613	Ru	25	35	4064.63	Ta	40	5
4070.677	Ir	30	10	4067.465	Th	8	1	4064.569	Sm II	15	15
4070.606	W	15	12	4067.392	La II	150	80	4064.53	Tb	2	—
4070.57	Tb	12 w	1	4067.384	Sm II	2	4	4064.456	Ru I	20	60
4070.53	Eu	5	—	4067.36	Tb	4	—	4064.45	S	—	[25]
4070.443	U	6	2	4067.279	Ce	25	—	4064.450	Fe I	2	1
4070.399	Gd	40	10	4067.275	Fe I	80	70	4064.41	U	6	—
4070.287	Gd	80	—	4067.235	Ta	40	10 h	4064.400	Ti II	—	2
4070.279	Mn	80	30	4067.20	U	4	4	4064.374	Ni I	10	—
4070.277	Fe	2	—	4067.159	Cb	3	5	4064.338	Th	8 h	3
4070.259	Pr	20	8	4067.110	Eu	8	1	4064.325	Re I	8	—
4070.24	Dy	4	2 h	4067.085	U	3	5	4064.315	Sm	15	6
4070.16	Se II	—	[500]	4067.051	Ni II	—	30	4064.219	Ti I	50	15
4070.11	Tb	10	—	4067.04	Ho	2	—	4064.2	C	—	[5]
4070.094	Ce	12	1	4067.03	V II	—	2	4064.171	Mo	5	8
4070.012	U	12	1	4067.000	Sc I	3	2	4064.165	U	6	10
4070.002	Mo	25	25	4066.979	Fe I	100	80	4064.155	Zr I	100	6
4069.921	Ce	2	3	4066.975	Mo	10 h	10 h	4064.105	Ru	15	25
4069.919	Ir	30	20	4066.938	Cr	25	30	4064.036	Ne I	—	[50]
4069.903	O II	—	[125]	4066.908	W	9	10	4063.931	V I	15	5
4069.883	Fe II	1	1	4066.906	Ce II	6	—	4063.93	Cs	—	[15]
4069.882	Mo	25	25	4066.854	Nd	2	—	4063.919	Ce	8 l	2
4069.804	W	7	6	4066.800	U	6	12	4063.904	Mo	5	5
4069.704	Ce	4	—	4066.782	Ca	2 h	2	4063.90	Tb	12	—
4069.635	O II	—	[60]	4066.728	Sm II	20	20	4063.732	Cb	—	5
4069.611	U	8	—	4066.693	Os	100	100	4063.60	Br	—	[10]
4069.562	Er	6	—	4066.69	Dy	6	—	4063.597	Fe I	400	300
4069.548	Co I	2 h	—	4066.590	Fe	40	20	4063.528	Mn	100	60
4069.540	Zr	4	—	4066.566	Ce	2 h	—	4063.528	Sm II	10	4
4069.52	Ga	—	2	4066.53	U	4	8	4063.43	Gd	10	5
4069.469	Th	3	—	4066.497	Ce	8	2	4063.410	Th	10	10
4069.389	Ne I	—	[5]	4066.369	Co I	5	5	4063.35	Tm	4	5
4069.29	Tb	3	—	4066.367	Mo	15	20	4063.337	Zr I	8	—
4069.267	Nd	15	12	4066.313	Os	9	4	4063.293	Cu I	30 w	7
4069.248	Er	7	—	4066.30	Dy	5	2	4063.285	Nd	5	3
4069.243	Ne I	—	[30]	4066.243	Ru	6	—	4063.284	Fe I	10	10
4069.243	Ni	2	—	4066.223	Mn	12	5	4063.177	Co I	3 h	—
4069.210	Th	40	30	4066.22	Hf	10	1 h	4063.119	U	15	1

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4062.988	Ru I	12	35	-	4060.265	Ti I	60	25	-	4057.347	Ni I	2	-	-
4062.948	Er	7	-	-	4060.234	W	4	9	-	4057.346	Fe I	20	3	-
4062.941	Ce II	25	5	-	4060.232	U	3	1	-	4057.337	Th	10	8	-
4062.94	O II	-	[30 h]	Mh	4060.199	Hf	10	4	-	4057.303	Ce	2	-	-
4062.90	Ne II	-	[30]	Bn	4060.175	I II	-	[5]	Ke	4057.199	Co I	100	-	-
4062.899	Nd	8	-	-	4060.169	Ce	6	1	-	4057.188	In II	-	[10]	Ps
4062.853	Ru	10	10	-	4060.103	U	4	8	-	4057.10	Ca	2	3	Ad
4062.842	Hf	10	3	-	4060.082	Zr I	10	-	-	4057.08	Cl	-	[10]	Bl
4062.817	Pr	150	50	-	4060.02	Eu	3	-	Kn	4057.074	V I	20	10	-
4062.801	Ta	3	5 h	-	4059.961	Nd	20	12	-	4057.070	In II	-	[100]	Ps
4062.78	Tb	10	1	-	4059.883	Th	8	8	-	4057.06	Tb	4	1	m
4062.73	As II	-	10	Ro	4059.881	Gd	50	20	-	4057.01	Kr II	-	[300 hs]	Me
4062.72	V I	2	2	Me	4059.875	Ca	2 h	3	-	4056.979	Co I	20 h	-	-
4062.698	Cu I	500 w	20	-	4059.785	Er	18	2	-	4056.941	Cb	3	5	-
4062.673	Ir	8	-	-	4059.721	Fe	15	8	-	4056.936	In II	-	[500]	Ps
4062.654	Zr	3	-	-	4059.608	Mo	10	10	-	4056.900	Ce	15	2	-
4062.65	Eu	10 W	-	Kn	4059.509	Er	7	-	-	4056.842	Nd	8	8	-
4062.594	Gd	30	6	-	4059.506	Cb	5	2	-	4056.8	Al II	-	[2]	Sy
4062.573	Ta	2	3 h	-	4059.431	Ru	7	-	-	4056.793	Cr	15	3	-
4062.557	Ce	3	-	-	4059.40	Tb	3	1	-	4056.785	In II	-	[30]	Ps
4062.549	U	12	18	-	4059.392	Mn	20	15	-	4056.747	In II	-	[50]	Ps
4062.49	Ca I	2	-	Fl	4059.376	Eu	25	-	-	4056.740	U	1	2	-
4062.444	Fe I	120	100	-	4059.37	Pr	4	3	-	4056.7	Cu I	8 wh	-	HS
4062.325	U	6	-	-	4059.367	Ce	3	1 h	-	4056.67	Sr II	4	4	Sd
4062.319	Sm	5	1	-	4059.346	Gd	10 w	3	-	4056.591	In II	-	[5]	Ps
4062.225	Pr	5	3	-	4059.322	Ce II	8 h	-	-	4056.583	Sc I	5	2	-
4062.223	Ce	40	8	-	4059.27	P	-	[100]	Gu	4056.57	Kr I	-	[3]	Me
4062.20	Eu	3	-	m	4059.259	Th	8	5	-	4056.543	Pr	100	60	-
4062.20	Tb	5	-	-	4059.254	W	5	4	-	4056.513	Zr I	6	-	-
4062.152	Eu	10	2	-	4059.234	Ir	30	4	-	4056.473	Ir	12	2	Ab
4062.144	Pb	20	20	-	4059.035	Eu	4	-	Kn	4056.465	W	2	5	-
4062.12	Xe II	-	[3]	Hu	4059.025	U	1	2	-	4056.342	Rh I	3	2	-
4062.08	P II	-	[15 h]	Gu	4058.985	Zr I	8	-	-	4056.338	Ce	4	-	-
4062.076	Mo	80	80	-	4058.96	Mg	2	-	-	4056.321	I	-	[15]	Ke
4062.06	Se II	-	[70]	Bl	4058.938	Cb I	1000 w	400 w	-	4056.318	Mo	15	15	-
4062.052	Sm	-	6	-	4058.930	Mn	80	60	-	4056.291	U	5	-	-
4061.977	Cb	2	10	-	4058.930	Ca I	3 d	-	-	4056.258	V	1	3	-
4061.955	Fe	3	1	-	4058.92	Tm	20	6	-	4056.248	Ce	3	-	-
4061.862	Re I	20	-	-	4058.882	Ru	10	-	-	4056.212	Ti II	3	2	-
4061.858	Gd	3	-	-	4058.867	Sm II	30	20	-	4056.182	Yb	2	10	-
4061.811	Ce	5	-	-	4058.81	Tb	3 W	-	-	4056.13	Pr	5	2	-
4061.744	U	2	5	-	4058.778	Pr	25	15	-	4056.11	Tb	2	-	-
4061.742	Mn	80	30	-	4058.772	Cr	80	50	-	4056.07	U	-	5	-
4061.715	Nd	5	3	-	4058.760	Fe I	40	10	-	4056.052	Cr	30	8	-
4061.705	Ce	2	-	-	4058.624	Zr I	9	1	-	4056.04	Gd	3	-	Kn
4061.66	Pt II	-	10	Sh	4058.61	Mo	-	10	-	4056.012	Mo	25	30	-
4061.574	Dy	3	-	-	4058.600	Co I	100	-	-	4055.990	Er	5	-	-
4061.57	Tb	40	2	-	4058.49	Si	-	3	Sy	4055.985	U	8	-	-
4061.552	Er	12	2	-	4058.464	Ta	10	5	-	4055.848	Er	6	-	-
4061.529	Zr I	25	1	-	4058.449	Eu	2	-	-	4055.838	Ce	12	-	-
4061.423	Ce II	6	-	-	4058.44	Tb	5	1	-	4055.76	Pr	6 wh	3	-
4061.399	Ta	50	30	-	4058.25	Dy	2 h	-	Ed	4055.730	U	-	5	-
4061.349	U	12	1	-	4058.244	Ce II	18	-	-	4055.717	Ir	7	-	Ab
4061.336	Pr	4	2	-	4058.231	Gd I	100	60	-	4055.707	Zr I	25	3	-
4061.298	Gd	8	12	-	4058.229	Fe	80	25	-	4055.671	Nd	10	5	-
4061.263	Cb	4	3	-	4058.20	Se II	-	[20]	Bl	4055.648	W	6	5	-
4061.164	Gd	3	-	-	4058.19	Pr	6	8	-	4055.545	Mo	2	10	-
4061.110	Fe	3	1	-	4058.190	Co I	100	-	-	4055.543	Mn	80	80	-
4061.085	Nd	40	30	-	4058.16	U	10	4	m	4055.50	Ho	-	2	Ex
4061.082	Er	5	-	-	4058.144	Ti I	50	6	-	4055.496	Os	30	3	-
4061.06	Sr I	8	6	Sd	4058.136	Ta	2	1	-	4055.471	Er	12	2	-
4061.06	Xe II	-	[2]	Hu	4058.085	La II	4	-	-	4055.353	Ir	6	-	Ab
4061.054	Dy	3	2	Kn	4058.02	Tb	2	-	-	4055.32	Tb	5	-	-
4061.049	Sm II	8	8	-	4058.0	bh Sr	3	-	L	4055.306	Zr I	3	-	-
4061.00	O II	-	[15 h]	Mh	4057.955	U	1	6	-	4055.3	Rn	-	[5]	Wa
4060.99	Au II	3	4	-	4057.950	Mn	80	20	-	4055.282	Sm	5	3	-
4060.907	U	4	5	-	4057.866	In	80	10	-	4055.264	Ag I	800 R	500 R	-
4060.89	Hg	-	[10]	Ps	4057.825	V I	10	2	-	4055.255	Eu	2	-	-
4060.86	Tb	25	3	-	4057.823	Th	2	3	-	4055.232	W	7	6	-
4060.85	V I	2	2	Me	4057.820	Pb I	2000 R	300 R	-	4055.214	Mn	10	5	-
4060.787	Cb	10	10 W	-	4057.819	Er	30	-	-	4055.20	Tb	3	-	m
4060.768	U	6	-	-	4057.71	Zn II	80	-	Vs	4055.159	Dy	5	8	-
4060.765	Cr	12	6	-	4057.68	Tb	2	-	-	4055.158	Ce	8	1	-
4060.716	Ce	8	1	-	4057.653	Sm	10	3	-	4055.039	Fe I	40	10	-
4060.708	W	8	7	-	4057.632	Mg I	10 w	-	-	4055.034	Ir	4	-	-
4060.60	O II	-	[30 h]	Mh	4057.624	Ti I	40	6	-	4055.03	Er	3	-	m
4060.58	Dy	8	2	Kn	4057.584	Mo	10	4	-	4055.030	Zr I	100	5	-
4060.579	Zr I	10	-	-	4057.556	Ce	2	-	-	4055.019	Ti I	80	30	-
4060.562	Nd	10	5	-	4057.55	Ho	2	2 h	Kn	4055.013	Dy	2 h	-	Kn
4060.471	Ce	10	2	-	4057.46	Xe II	-	[100 wh]	Hu	4054.991	Ce II	12	6	-
4060.38	Tb	20	1	-	4057.452	W	6	7	-	4054.96	Tb	2 h	-	-
4060.321	La I	80	5	-	4057.438	Mo	4	4	-	4054.883	Fe I	25	5	-
4060.313	Cb	5	5	-	4057.43	Hf	3	2	m	4054.864	Th	5	3	-
4060.301	Eu	2	-	-	4057.40	Dy	4	4	Kn	4054.845	Pr	50	40	-
4060.30	Ho	3	2	Ex	4057.39	P	-	[50]	Gu	4054.84	U	1	4	-

4054.8—4046.0 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4054.833	Fe I	25	5	—	4051.731	Mn	15	20	—	4048.992	Re I	30	—	—
4054.776	Pt I	5	2	—	4051.66	Xe	—	[2]	Hu	4048.942	Dy	5	—	Kn
4054.734	Gd I	80	20	—	4051.64	Cl	—	[6]	Bl	4048.89	Te	—	[70]	Bl
4054.732	Ru I	5	—	—	4051.619	Gd	4	—	—	4048.861	Th	—	10 wh	—
4054.724	Nd	12	4	—	4051.614	Ce	4	—	—	4048.848	W	5	6	—
4054.658	Ce	5	—	—	4051.515	Cb	5	5	—	4048.82	Gd	10 W	—	Kn
4054.64	Ca	2	2	Ad	4051.47	Tb	8	1	—	4048.814	Nd	15	10	—
4054.622	Co I	2	—	—	4051.429	Os	12	3	—	4048.81	Tb	5	—	—
4054.60	Tb	2	—	—	4051.427	Ce	20	3	—	4048.79	Ho	2	—	Kn
4054.555	Sc I	10	9	—	4051.400	Ru I	125	200	—	4048.780	Cr	80	50	—
4054.525	A I	—	[80]	I	4051.352	V I	15	4	—	4048.755	Mn	60	60	—
4054.512	Sm	—	2	—	4051.329	Cr	35	8	—	4048.674	Zr II	30	30	—
4054.49	Ho	3	2	Kn	4051.304	W	2	9	—	4048.661	Cb	3	5	—
4054.45	Lu	25	3	Me	4051.27	Xe II	—	[5 h]	Hu	4048.654	Eu	2	—	—
4054.433	Zr I	20	—	—	4051.233	Ce	3	—	—	4048.616	Sm II	10	10	—
4054.391	Ta	4	—	—	4051.190	Ir	5	—	Ab	4048.590	Gd	8	8	—
4054.313	U	12	15	—	4051.184	Mo	5	10	—	4048.448	Th	5	5	—
4054.183	Fe I	2	—	—	4051.152	Pr	50	30	—	4048.409	Rh	4	3	—
4054.183	Cr II	1	3	—	4051.145	Nd	15	15	—	4048.4	Bi II	3 h	10	MI
4054.18	Cl II	—	[9]	Ks	4051.11	Ca	2	3	Ad	4048.366	Ce II	8	1	—
4054.12	Tb	9	1	m	4051.103	Th	8	5	—	4048.35	Dy	15	2	Ed
4054.099	Ce	2	—	—	4051.087	U	6	3	—	4048.346	Er	15	1	—
4054.051	Ru I	40	100	—	4051.0	Rn	—	[10]	Wa	4048.266	Eu	4	—	—
4054.03	Br	—	[4]	Bl	4050.963	V I	15	4	—	4048.252	W	6	7	—
4054.00	Tb	5	—	m	4050.947	Ce	2	—	—	4048.22	O II	—	[10 h]	Fl
4053.956	Cs	—	[15]	Sv	4050.930	U	3	5	—	4048.14	Pr	8	4	—
4053.940	W	9	10	—	4050.926	Re	10	—	—	4048.065	U	8	2	—
4053.922	Co I	6	2	—	4050.9	Sr	1 h	2 h	Sd	4048.057	Th	8	8	—
4053.92	Ho	400	200	Kn	4050.891	Th	15 h	5	—	4048.054	Os	20	2	—
4053.885	Er	20	1	—	4050.885	Hf	20	1 h	—	4047.96	Hf	8	25	Me
4053.86	Dy	3	—	Ed	4050.812	Ce	12	1	—	4047.935	W	9	8	—
4053.837	Ti II	25	8	—	4050.688	Fe	5	—	—	4047.875	Ce	5	—	—
4053.837	Nd	12	3	—	4050.667	Hf II	4	5	—	4047.87	Cl	—	[6]	Bl
4053.659	V	2	—	—	4050.656	Cu I	30	—	Hs	4047.850	Er	5	—	—
4053.651	Cu II	—	2 h	—	4050.579	Dy	30	15	—	4047.846	Gd	150 l	50	—
4053.648	Gd I	100	40	—	4050.570	Er	25	1	—	4047.792	Sc I	25	10	—
4053.587	V	—	70	Me	4050.483	Zr I	25	—	—	4047.77	Se II	—	[8]	Bl
4053.570	U	5	5	—	4050.46	Cl	—	[8]	Bl	4047.74	Eu	2	—	Kn
4053.531	Th	10	5	—	4050.43	Eu	6	—	Kn	4047.740	Dy	4	2	Kn
4053.525	Nd	5	—	—	4050.42	Kr II	—	[50 whl]	Me	4047.699	Ce	3	—	—
4053.506	Ce II	40	8	—	4050.370	Gd	8	—	—	4047.632	Yt I	50	10	—
4053.48	Pr	8	4	—	4050.329	Zr II	20	10	—	4047.620	Ce	3	—	—
4053.443	Rh I	4	3	—	4050.282	U	2	3	—	4047.610	U	18	3	—
4053.34	Dy	2	2	Ed	4050.13	B	—	2	Sy	4047.563	Mo	4	4	—
4053.33	Tb	4	1	m	4050.11	S II	—	[10]	Hn	4047.51	A II	—	[2]	Rt
4053.302	Gd	100	80	—	4050.109	Yb	—	6	—	4047.50	Ho	3	3	Ex
4053.273	Fe	6	2	—	4050.092	Mo	6	8	—	4047.4	Rb	—	[4]	Dr
4053.268	U	2	—	—	4050.09	I I	—	[35]	Db	4047.398	Mo	4	4	—
4053.260	V I	6	2	—	4050.079	La II	60	60	—	4047.392	Ce	4	—	—
4053.094	Eu	2	—	—	4050.039	U	25	35	—	4047.39	Yb	—	4	Me
4053.070	Ce	5	—	—	4050.035	Cr I	30	1	—	4047.363	Sm II	8	6	—
4053.026	U	8	8	—	4049.951	Sc I	8	—	—	4047.351	Ca	2	3	—
4053.011	Zr	5	—	—	4049.90	Gd	100	60	m	4047.329	Ir	4	—	Ab
4052.94	A II	—	[20]	Rt	4049.885	I	—	[30]	Ke	4047.310	Fe I	3	—	—
4052.937	Ti I	25	1	—	4049.87	Fe	30	3	—	4047.275	Ce	18	2	—
4052.922	Co I	40	—	—	4049.859	Nd	10 d	2 d	—	4047.204	Mo	4	3	—
4052.86	Tb	40 w	2	m	4049.832	Sm	40	20	—	4047.201	K I	400	200	Da
4052.81	Au II	—	60	—	4049.83	Pr	8	2	—	4047.184	Cs II	—	[20]	Sv
4052.664	Fe I	3	1	—	4049.790	Ce II	8	1 h	—	4047.18	Te	—	[15]	Bl
4052.662	U	6	—	—	4049.783	Cr	30	6	—	4047.16	Tb	9	—	—
4052.628	Ce	2	—	—	4049.760	Cb	5	5	—	4047.158	Nd	12	10	—
4052.575	Pr	10	3	—	4049.74	Hf	6	2	Me	4047.098	Pr	20	12	—
4052.477	U	3	3	—	4049.74	U	8	2 h	—	4047.093	Gd	6	5	—
4052.472	Mn	20	20	—	4049.61	Pr	8	2	—	4047.05	U	6	8	—
4052.41	Tb	5	1	m	4049.573	Sm II	3	1	—	4046.960	Er	8	—	—
4052.40	Dy	2	—	Kn	4049.555	Ce	2	—	—	4046.886	Mo	3	20	—
4052.321	W	6	7	—	4049.548	Gd	3	—	Kn	4046.853	Ce	3	—	—
4052.307	Fe I	2	—	—	4049.527	U	—	4	—	4046.842	Gd	10	10	—
4052.293	Mo	15 h	5 h	—	4049.48	Er	10 d	2	—	4046.761	Ni I	2	—	—
4052.290	Sm II	10	2	—	4049.45	Hf II	10	10	—	4046.760	Cr I	30	3	—
4052.28	Yb	10	2	m	4049.441	Gd	80	20	—	4046.734	Ce	2	—	—
4052.22	Cl II	—	[12]	Ks	4049.431	Mn	5	5	—	4046.702	Nd	8	2	—
4052.21	Tm	8	—	Me	4049.413	Ru I	15	12	—	4046.701	W	10	12	—
4052.195	Ru I	25	50	—	4049.399	Ti I	35	1	—	4046.635	Pr	8	3	—
4052.084	Eu	2	—	—	4049.374	Dy	6	—	Kn	4046.561	Hg I	200	300	—
4052.080	U	5	5	—	4049.362	Ce	6	—	—	4046.539	Ir	8	—	Ab
4052.058	Ce	6	—	—	4049.331	Fe I	10	2	—	4046.521	U	5	5	—
4051.985	Ce	18 l	3 h	—	4049.290	Co I	4	2	—	4046.486	Sc I	10	—	—
4051.936	Mo	4	5	—	4049.196	Gd	5	—	—	4046.45	Pt II	—	20	Sh
4051.914	U	20	25	—	4049.194	Ce	6	—	—	4046.402	U	3	5	—
4051.908	Fe	10	2	—	4049.170	U	10	3	—	4046.340	Ce I, II	30	10	—
4051.899	Hf	8	4	—	4049.158	Cr	4	3	—	4046.27	Cb	3	1	Me
4051.85	Tb	25	2	m	4049.039	Rh I	2	2	—	4046.264	V	1	15	—
4051.849	Sc I	3	—	—	4049.030	Ce	18	1	—	4046.154	Sm II	12	10	—
4051.817	Sm	2	1	—	4049.006	Cr	4	3	—	4046.082	Zr I	3	—	—

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4045.983	Dy	150	12	-	4043.06	Yb	-	8 h	Me	4040.09	Yb	1	8	Me
4045.973	Ce II	5	-	-	4043.046	Nd	15	1	-	4040.078	Ir	40	5	-
4045.97	Tb	25	1	-	4043.015	Er	10	-	-	4040.00	Tm	3	4	Me
4045.966	A I	-	[150]	IHu	4042.979	Th	5	3	-	4039.944	Nd	8	-	-
4045.95	Ho	10	2	Ex	4042.911	La II	400	300	-	4039.896	Th	8	1	-
4045.89	Er	2	-	Ed	4042.91	A II	-	[80]	Rt	4039.890	Ce	12 I	-	-
4045.862	Gd	[30]	-	Kn	4042.896	Sm II	10	10	-	4039.855	W	12 I	9 I	-
4045.82	Ag	10	2	-	4042.873	Mo	15	15	-	4039.841	Cs	-	[50]	Sv
4045.815	Fe I	400	300	S	4042.761	Gd	5	5	-	4039.834	Yt I	12	8	-
4045.762	Ru	25	-	-	4042.752	U	40	10	-	4039.781	U	15	2	-
4045.662	Ne I	-	[2]	Ps	4042.711	Sm II	10	9	-	4039.727	Tb	2	-	-
4045.612	Zr II	10	10	-	4042.642	Ne I	-	[50]	Ps	4039.692	K II	-	[15]	Dm
4045.601	W	12	15	-	4042.635	V I	15	2	-	4039.669	Gd	10	5	-
4045.590	Cb	1	5 h	-	4042.594	K II	-	[30]	Dm	4039.639	U	1	3	-
4045.543	Mo	3	3	-	4042.584	Ce I, II	50	3	-	4039.633	Ta	5	1	-
4045.43	Ho	200	80	Kn	4042.570	Cb	3	5	-	4039.576	V II	3	8	Me
4045.43	Er	8 wd	1 wd	m	4042.507	Nd	2	-	-	4039.57	B	-	4	Sy
4045.390	Co I	400	-	-	4042.463	U	5	8	-	4039.544	Nd	5	1	-
4045.316	Ce	3	-	-	4042.391	W	8	7	-	4039.529	Cb	30	50	-
4045.31	Tb	5	-	-	4042.33	Tb	9	-	-	4039.50	Sm	10	2	-
4045.3	Rn	-	[35]	Rc	4042.327	Ne I	-	[10]	Ps	4039.50	Gd	10	-	Kn
4045.281	Dy	3	-	Kn	4042.246	Cr I	30	1	-	4039.482	Tb	7	-	-
4045.209	Ce	8	3	-	4042.225	Zr I	25	-	-	4039.423	W	7	6	-
4045.206	Mn	15	15	-	4042.135	Ce	8	-	-	4039.4	Rn	-	[5]	Wa
4045.136	U	4 h	4 h	-	4042.06	Eu	10 w	2	-	4039.357	Pr	50	20	-
4045.133	Mn	15	-	-	4042.045	Co	3	-	-	4039.302	Al II	-	[2]	Sy
4045.125	Mo	2	3	-	4041.998	Ru	12	1	-	4039.298	Ce	2	-	-
4045.047	Sm II	10	6	-	4041.989	Dy	12	4	Kn	4039.22	Cr	15	3	-
4045.010	Gd I	20	5	-	4041.937	I	-	[15]	Ke	4039.210	Ru	25	50	-
4044.948	Sm	10	10	-	4041.917	Os	100 I	6	-	4039.20	Tb	5	-	-
4044.90	Xe	-	[4 whl]	Hu	4041.87	Pr	4	1	-	4039.192	Eu	15	-	-
4044.892	Ir	2	6	Ab	4041.843	Tb	7	-	-	4039.105	Sm	2	2	-
4044.824	U	10	2	-	4041.82	Se II	-	[8]	Bt	4039.100	Cr	100	40	-
4044.818	Pr	50	35	-	4041.79	Cr I	20	-	m	4039.095	Cb	5	10	-
4044.75	N II	-	[2]	Fl	4041.667	Sm II	25	10	-	4039.00	Mo	3	3	-
4044.712	Cb	5	3	-	4041.640	Zr I	7	-	-	4038.90	Pr	4	1	-
4044.67	Kr II	-	[80]	Me	4041.61	Br	-	[8]	Bl	4038.864	Tb	10	-	Kn
4044.64	Xe	-	[3 wh]	Hu	4041.604	V	10	2 W	-	4038.86	Ho	4	2 d	Ex
4044.611	Fe I	70	35	-	4041.558	U	2	4	-	4038.834	Dy	5	2	Kn
4044.58	Cl	-	[10]	Bl	4041.536	Tb	4	-	-	4038.82	A	-	[40]	Rt
4044.564	Zr I	25	2	-	4041.529	Cb	2	-	-	4038.805	Fe	2	-	-
4044.49	P II	-	[150 w]	Gu	4041.4	Rb	-	[4]	Dr	4038.802	U	3	-	-
4044.47	Tm	15	3	Me	4041.37	Ta	5	-	-	4038.732	Mn	15	15	-
4044.419	Ca	5 d	-	-	4041.361	Te	2	-	-	4038.640	Os	9	3	-
4044.418	A I	-	[1200]	I	4041.361	Mn	100	50	-	4038.631	Mo	-	10 h	-
4044.416	U	18	25	-	4041.325	N II	-	[20 h]	Fl	4038.631	U	3	3	-
4044.39	Hf	10	4	-	4041.3	Pb	-	5 h	Kl	4038.545	V	-	2	Me
4044.347	Nd	3	-	Kn	4041.285	Fe	5	2	-	4038.528	Dy	15	4	Kn
4044.330	Ce	4 h	1	-	4041.270	Ce	6	-	-	4038.519	Ca	2	2	-
4044.288	W	15	12	-	4041.207	Th	20	10	-	4038.512	U	5	5	-
4044.140	K I	800	400	Da	4041.122	Mo	6	5	-	4038.467	Pr	15	10	-
4044.113	Sm	4	-	-	4041.065	Nd	15	5	-	4038.43	Cl	-	[6]	Bl
4044.105	Cb	5	10	-	4041.057	Ta	40	4 h	-	4038.387	Sb	-	2 h	Sp
4044.10	Hg II	5	10	-	4040.973	La I	8	-	-	4038.37	Eu	2	-	-
4044.09	Cl II	-	[4]	Ks	4040.94	Au I	50	40	-	4038.344	Ce	10	5	Kn
4044.062	Ce	3	-	-	4040.938	Tb	3	-	-	4038.333	Ti	12	1	-
4044.041	U	1	4	-	4040.87	Ta	50	5 h	-	4038.31	Se II	-	[40]	Bl
4044.030	Gd	3 h	-	Kn	4040.84	Ho	150	30	Kn	4038.24	Tb	4	1	-
4043.97	Eu	20	-	Kn	4040.802	Co I	15	1	m	4038.179	Cb	3	5 h	-
4043.955	Ce	3	-	-	4040.796	Nd	40	40	-	4038.168	U	5	6	-
4043.905	Fe I	25	7	-	4040.777	Er	20	-	-	4038.154	Pr	12	3	-
4043.879	I	-	[20]	Ke	4040.762	Ce II	70	5	-	4038.124	Nd	15	10	-
4043.804	Sc I	12	4	-	4040.76	Dy	6	-	Ed	4038.084	Mo	20	15	-
4043.775	Ti I	20	-	-	4040.732	Ir	2	-	Ab	4038.083	Sm II	6	4	-
4043.751	Cu II	-	10	Sh	4040.678	Tb	3	-	-	4037.993	Cr	15 h	-	-
4043.747	Ce	3	-	-	4040.67	Pr	2	-	-	4037.987	U	8	2	-
4043.738	Mo	8	8	m	4040.647	Co I	2	-	-	4037.960	Ce	18	2	-
4043.710	Gd	5	5	-	4040.644	Fe	20	7	-	4037.906	Gd	100	30	-
4043.696	Cr	30	2	-	4040.64	Cl II	-	[9]	Ks	4037.841	Os	80 I	4	-
4043.66	Tb	8 w	1 w	-	4040.637	Mo	5	3	-	4037.834	U	3	1	-
4043.596	Nd	15	5	-	4040.591	W	9	8	-	4037.83	Kr II	-	[30]	Me
4043.576	Zr I	25	-	-	4040.54	Sb	-	[2 h]	Lg	4037.778	Mo	10	15	-
4043.54	N	-	[10 h]	Fl	4040.481	Ru	12	3	-	4037.750	W	-	6 I	-
4043.502	Cu II	-	25	Sh	4040.47	Eu	5	-	-	4037.737	Ru	12	5	-
4043.473	Ce	4 s	-	-	4040.468	Cb	2	5 h	Me	4037.722	Cr	15	-	-
4043.422	Cs	-	[20]	Sv	4040.440	Ir	5	2	Ab	4037.696	Ne I	-	[5]	Ps
4043.409	Ce	2	-	-	4040.40	Tb	10	1	-	4037.680	Er	4	-	-
4043.401	Th	8	1	-	4040.40	Hg II	-	[20]	Ps	4037.665	Ce II	25	3	-
4043.365	Sm II	5	3	-	4040.318	Ti I	40	1	-	4037.665	Eu	8 W	-	-
4043.270	Mo	3	2	-	4040.31	V I	2	1	Me	4037.659	Cb	-	20	-
4043.162	Cb	3	10	-	4040.3	Ca	2	3	Ad	4037.643	Nd	5	2	Kn
4043.150	Th	10	3	-	4040.239	Zr II	4	4	-	4037.628	Dy	6	-	Kn
4043.127	U	2	3	-	4040.178	Re	15	-	-	4037.615	Ne I	-	[15]	Ps
4043.09	Gd	4	-	Ed	4040.100	Tb	8	-	Kn	4037.60	Ho	3	-	Ex
4043.078	Ce	2	-	-	4040.096	Fe	1	2	-	4037.59	Xe II	-	[100]	Hu

4037.5—4029.2 A.

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
4037.554	Mn	3	3	-	4034.259	Ce	2	-	-	4031.790	Mn	8	10	-
4037.511	Fe	30	-	-	4034.256	Th	10	10	-	4031.781	U	8	2	-
4037.4	bh B	25	-	L	4034.23	Sc I	10	2 h	-	4031.755	Pr	50	30	-
4037.390	Ce	6	-	-	4034.17	Pt II	-	5	Sh	4031.754	Ti I	35	1	-
4037.380	Nd	-	5	-	4034.147	Nd	10 d	2	-	4031.75	Ho	4	1 h	Kn
4037.35	Br	-	[5]	Ks	4034.11	Eu	2	3	-	4031.692	La II	400	300	-
4037.338	Gd	100	30	-	4034.086	Zr II	5	2	-	4031.690	Er	6 w	-	-
4037.303	Mo	8	8	-	4034.048	Cr I	20	-	-	4031.675	W	8	7	-
4037.294	Cr I	80	12	-	4034.012	Nd	4	2	-	4031.669	Ce	10 d	-	-
4037.29	Xe II	-	[50]	Hu	4034.01	S	-	[8]	Ms	4031.64	Tb	50	3	-
4037.262	Ne I	-	[5]	Ps	4034.002	U	4	4	-	4031.64	Re	2	-	-
4037.26	Ag	-	2 h	-	4033.999	Mo	3	3	-	4031.633	Al II	-	[2]	Sy
4037.258	Th	8	5	-	4033.913	W	-	10	-	4031.558	Ir I	3	-	Ab
4037.22	Pr	8	2	-	4033.906	Ti I	40	3	-	4031.545	Nd	10	3	-
4037.214	La I	50	3 h	-	4033.900	Nd	10	4	-	4031.41	A	-	[2]	Rt
4037.203	Co I	2	-	m	4033.88	Hf II	5	8	m	4031.397	Sc I	10	2	-
4037.18	Ca	2	2	Ad	4033.857	Pr	50	35	-	4031.38	Eu	7	3	-
4037.16	Tb	5	-	-	4033.83	A	-	[30]	Rt	4031.355	Zr II	3	1	-
4037.135	Eu	6	2	-	4033.786	Ce	6	-	-	4031.336	Ce II	40	8	-
4037.092	Sm II	10	4	-	4033.762	Ir	100	25	-	4031.33	Pb I	-	5	Sx
4036.882	Sc I	8	-	-	4033.728	U	12	12	-	4031.327	Th	5	5	-
4036.867	U	10	-	-	4033.69	Eu	8 w	-	-	4031.314	Cb	-	5	-
4036.860	W	12	12	-	4033.68	P	-	[15]	Gu	4031.306	U	8	8	-
4036.840	Gd	10	8	-	4033.666	Dy	15	4	Kn	4031.243	Fe I	2	-	-
4036.776	V II	8	40	-	4033.64	N	-	[2]	Du	4031.219	V I	10	3	-
4036.76	Ag	-	3	-	4033.631	Mo	6	6	-	4031.135	Al II	-	[2]	Sy
4036.667	Mo	5	5	-	4033.630	Mn	5	5	-	4031.130	Cr	30	6	HI
4036.596	La II	5	15	-	4033.584	Zr	3	-	-	4031.10	Cs	-	[10]	Bs
4036.573	Ce	2	-	-	4033.543	Sb	70	60	-	4031.099	Th	5	5	-
4036.567	Th	15	15	-	4033.504	Nd	10	5	-	4031.09	Pr	12	8	-
4036.56	Eu	3	-	-	4033.491	Gd	10	5	-	4031.081	Dy	7	-	Kn
4036.560	Mn	2	2	-	4033.427	U	12	10	-	4030.997	Ru I	15	12	-
4036.555	Nd	10	1	-	4033.378	Ce	2 h	-	-	4030.915	Mo	3	5	-
4036.554	U	3	8	-	4033.307	Fe I	40	-	-	4030.881	Gd	8	-	Kn
4036.53	Cl II	-	[10]	Ks	4033.263	Cr I	30	8	-	4030.867	Al II	-	[8]	Sy
4036.492	Ru	10	3	-	4033.24	Pr	3	2	-	4030.86	Lu	-	5 hl	Me
4036.45	Tb	10	-	-	4033.203	Cb	5	5	-	4030.855	Th	10	8	-
4036.43	Br	-	[10]	Bl	4033.191	Sr I	6	-	ISn	4030.853	Ce	2	-	-
4036.335	Dy	15	4	Kn	4033.073	Mn I	400 r	20	-	4030.83	Yt	2	2	Ed
4036.26	Ba II	-	[10]	Rs	4033.072	Cr	15	2	-	4030.739	Zr I	20	-	-
4036.249	Mn	2	2	-	4033.069	Ta	100	10	-	4030.758	U	5	6	-
4036.22	P II	-	[15 h]	Gu	4033.066	In	4	-	-	4030.755	Mn I	500 r	20	-
4036.219	Tb	10	-	-	4033.04	Tb	125	5	-	4030.681	Cr	40	30	-
4036.116	Er	3	-	-	4032.982	Ga I	1000 R	500 R	-	4030.668	Ta	10	1 d	-
4036.11	Eu	50 W	-	Kn	4032.977	Sm	20	8	Kn	4030.66	Eu	5 w	-	Kn
4036.10	He	2	-	Kn	4032.974	Pr	15	10	-	4030.657	Sc I	10	2	-
4036.088	Co	5	-	-	4032.97	A I	-	[20]	Ms	4030.514	Ti I	80	18	-
4036.080	I II	-	[50]	Ke	4032.89	Se	-	[10]	Bl	4030.492	Fe I	120	60	-
4036.056	Th	10	3	-	4032.856	V I	2	1	-	4030.470	Nd	20	15	-
4036.05	Pr	15	1	-	4032.85	Br	-	[20]	Bl	4030.425	Sm II	10	3	-
4036.005	Nd	10	3	-	4032.847	Dy	8	-	Kn	4030.377	Sr I	40	-	ISn
4035.990	Ce	2	-	-	4032.812	S II	-	[125]	Hn	4030.344	Ce II	18	4	-
4035.928	Cb	3	5	-	4032.748	Ce	2	-	-	4030.3	Ca	10	2 h	Ad
4035.896	V I	3	-	Me	4032.705	Tb	3	-	Kn	4030.293	Th	8	5	-
4035.893	Ta	10	5 h	-	4032.632	Ti I	35	1	-	4030.29	Br	-	[12]	Bl
4035.893	Zr I	40	2	-	4032.630	Fe I	80	15	-	4030.203	Eu	10 w	-	-
4035.83	Cs	-	[15]	Bs	4032.626	Tb	4	-	-	4030.194	Fe I	20	4	-
4035.830	Ti I	50	5	-	4032.554	Ce	3	-	-	4030.155	Ce	5	-	-
4035.79	Pr	3	1	-	4032.54	Th	10	8	Ex	4030.143	Ru	7	-	-
4035.728	Mn	50	60	-	4032.524	Cb	30	50	-	4030.07	Se II	-	[150]	Bl
4035.661	Mo	3	25	-	4032.521	Ru	10	5	-	4030.039	Zr I	35	2	-
4035.626	V II	40	80	-	4032.508	Nd	2	-	-	4029.996	Eu	5	-	-
4035.554	Co I	150	3	-	4032.502	Mo	8	8	-	4029.97	Tb	3	-	-
4035.47	A II	-	[30]	Rt	4032.492	Pr	20	12	-	4029.95	W	6	7	-
4035.42	Pr	10	1	-	4032.480	Dy	20	12	Kn	4029.941	Mo	1	30	-
4035.403	Gd I	8	5	-	4032.477	Er	9	-	-	4029.94	Ta	50	5	Ks
4035.399	Nd	8 d	2	-	4032.471	Zr	5	-	-	4029.92	U	6	4	-
4035.355	W	10	9	-	4032.469	Fe I	4	1	-	4029.914	Nd	10	3	-
4035.335	Ir I	6	-	Ab	4032.385	W	6	7	-	4029.84	Yt I	5	-	Me
4035.24	Cr	8	-	-	4032.379	Sr I	20	-	ISn	4029.798	U	1	2	-
4035.168	Nd	2	-	Kn	4032.294	U	2	2 h	-	4029.753	Ce II	4	-	-
4035.101	Sm II	50	3	-	4032.282	Tb	30	-	Kn	4029.73	Pr	15	12	-
4035.098	Cb	4	3	-	4032.266	Hf	5	2	-	4029.73	Te	-	[15]	Bl
4035.090	N II	-	[15 h]	Fl	4032.22	Se II	-	[8]	Bl	4029.681	Zr II	40	15	-
4035.07	Pr	2	1	-	4032.214	Ir	10	-	Ab	4029.66	Kr I	-	[2]	Me
4034.998	Cr	8	-	-	4032.205	Ru I	20	20	-	4029.639	Re I	80	-	-
4034.910	Ti I	25	2	-	4032.19	Cl	-	[4]	Ks	4029.636	Fe I	80	25	-
4034.886	Th	8	5	-	4032.146	Fe	10	-	-	4029.608	W	6	7	-
4034.858	Co	2	-	-	4032.092	I	-	[10]	Ke	4029.58	Eu	7	-	-
4034.74	Tm	10	10	-	4032.089	Th	3	-	-	4029.562	Rb II	-	15	Rr
4034.570	Ce	2	-	-	4031.965	Fe	80	-	-	4029.51	Mo	3	3	-
4034.523	Cb	10	5	-	4031.96	I	-	[10]	Bl	4029.41	Dy	5	2	Ed
4034.490	Mn I	250 r	20	-	4031.96	Ta	5	-	-	4029.310	Th	8	5	-
4034.38	Gd	5	-	Kn	4031.830	V I	10	3	-	4029.268	Ce	5	1 h	-
4034.30	Pr	20	5	-	4031.807	Nd	15	15	-	4029.22	Tb	2	-	-

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
4029.20	Cl	—	[8]	4026.158	Th	10	10	4023.597	U	3 h	6 h
4029.173	Hf II	10	12	4026.143	Ce	2	—	4023.588	La II	50	15
4029.143	Ir	6	—	4026.087	N	—	[10 h]	4023.582	Cs	—	[10]
4029.08	Cd II	—	5	4026.084	Nd	10	2	4023.56	Mo	—	25
4029.046	Th	5	3	4026.019	U	25	25	4023.533	Th	3	1
4029.041	Pr	12	5	4025.99	Mo	30 h	30 h	4023.43	Cr I	15	—
4029.025	W	5	7	4025.954	Hg	—	[20]	4023.403	Co I	200	—
4028.951	Zr I	40	1	4025.95	Eu	5	—	4023.389	V II	10	30
4028.85	Ho	4	1	4025.949	Rh I	3	1	4023.370	Ce	8	1
4028.82	Mo	3	3	4025.910	Mn	3	3	4023.353	Re I	40 w	—
4028.791	S II	—	[200]	4025.882	La II	50	50	4023.350	Gd I	20	10
4028.790	W	12	10	4025.75	Dy	2	—	4023.302	Zr I	5	—
4028.777	Fe	2	—	4025.73	Tb	15	2	4023.23	Se I	—	[20]
4028.754	Nd	10	5	4025.68	Cl II	—	[7]	4023.223	So I	60	—
4028.69	Pr	5	1	4025.67	Cs	—	[10]	4023.223	Sm II	30	25
4028.657	Th	8	8	4025.650	Ce	2	—	4023.174	V I	7	2
4028.646	Mo	6	6	4025.614	Re I	15	—	4023.170	U	6	6
4028.63	Eu	15 w	—	4025.612	Th	20	20	4023.154	Gd	20	10
4028.60	Tb	3	—	4025.605	Dy	10	2	4023.144	Rh I	10	5
4028.593	Mn	2	2	4025.600	W	—	10	4023.141	Cb	4	3
4028.563	Re	25	—	4025.546	Pr	40	25	4023.030	Zr	6	—
4028.52	Eu	10 W	—	4025.537	Er	3	—	4023.002	Nd	15	15
4028.48	Au	—	10	4025.495	F II	—	[300]	4022.965	Re I	25 d	—
4028.435	Ru	10	2	4025.487	Mo	6	5	4022.933	Ce	3 l	—
4028.418	Dy	5	8	4025.443	Eu	2	—	4022.91	Eu	6 W	—
4028.411	Ce II	35	8	4025.434	U	3	2	4022.872	Tb	15 d	—
4028.403	U	5	2 h	4025.39	Ho	3	—	4022.84	Hf	2	—
4028.345	Ti II	20	80	4025.294	Ce	2	—	4022.833	W	4	5
4028.325	Dy	10	—	4025.19	W	8	6	4022.748	Ce	4	—
4028.31	Tb	8	1	4025.19	Xe II	—	[15]	4022.744	Fe I	3	—
4028.27	Yb	—	8 h	4025.19	Pr	15	8	4022.738	Pr	12	6
4028.198	Ce II	2	—	4025.150	Ce	12	2	4022.714	Sm II	6	5
4028.158	Gd	25	8	4025.146	Tb	4	—	4022.692	Ru	7	3
4028.02	Cr	35	—	4025.136	Ti II	15	25	4022.657	Cu I	400	25
4027.990	Ce	4	—	4025.114	Ni I	2	—	4022.453	Ce	5	—
4027.976	Cb	5	10	4025.076	I	—	[30]	4022.388	Cb	2	10
4027.97	Xe	—	[2 h]	4025.013	U	8	3	4022.345	Gd	15	—
4027.95	Tb	4	—	4025.012	Cr	100	25	4022.33	Tb	3	—
4027.878	Ce	4	—	4025.010	F II	—	[150]	4022.32	As II	—	5
4027.805	U	12	8	4024.920	K II	—	[15]	4022.272	Ce	15	4
4027.79	In II	—	[50 h]	4024.918	Zr I	25	3	4022.263	Cr	80	40
4027.787	Dy	15	4	4024.906	Dy	10	—	4022.199	Pr	8	4
4027.693	Ce II	20 s	3	4024.83	In	—	100 wh	4022.161	Ru I	40	100
4027.644	Th	5	3	4024.785	Nd	20	10	4022.119	W	12	10
4027.64	Pr	15	5	4024.781	Tb	7	—	4022.093	Th	20	15
4027.613	Gd I	10	8	4024.739	Fe I	120	30	4022.052	Ni I	3	—
4027.485	Ti	30	3	4024.727	F II	—	[500]	4022.032	Nd	4	2
4027.402	U	4	2	4024.703	Tb	4	—	4021.99	In II	—	[10]
4027.34	Tb	5	3	4024.695	Ru I	12	5	4021.96	Er	5	—
4027.330	Th	5	3	4024.68	Ca	3 wh	3	4021.929	U	2	3
4027.312	Cb	5	5	4024.573	Ti I	80	35	4021.925	V I	8	2
4027.28	Eu	2 w	—	4024.567	Cr I	20	1	4021.89	Br	—	[4]
4027.205	Zr I	100	4	4024.491	Ce	15	5	4021.870	Fe I	200	100
4027.20	Ho	5	1	4024.472	Th	5	5	4021.827	Ti I	100	20
4027.128	Re	3	—	4024.44	Tb	4	—	4021.795	Nd	12	10
4027.103	Cr	80	30	4024.438	Zr II	5	4	4021.78	Br I	—	[2]
4027.066	Er	2	—	4024.437	Dy	20	—	4021.74	Tb	2	—
4027.048	Ce	5	—	4024.41	Pr	15	2	4021.66	In II	—	[50]
4027.037	Co I	200	4	4024.348	Ce	5	—	4021.618	Fe I	2	—
4027.012	Th	8	1	4024.34	Eu	3 W	—	4021.558	Er	5	—
4026.999	U	6	8	4024.305	Ru	7	4	4021.408	Sm II	4	1
4026.944	Ta	40	30	4024.24	Tm	7	—	4021.40	U	3 h	3 h
4026.936	Ce	2	—	4024.137	Sb	—	4	4021.39	Tm	4	10
4026.93	Tb	2	—	4024.104	Fe I	8	2	4021.330	Nd	12	12
4026.924	Mo	5	5	4024.091	Mo	30	25	4021.26	Se I	—	[20]
4026.9	Rb	—	[25]	4024.07	Tb	40 W	1	4021.254	U	6	6
4026.839	Pr	20	5	4024.07	Pr	5	1	4021.242	Ce	5	—
4026.723	Re	2	—	4024.04	Br	—	[20]	4021.12	Tb	10	1
4026.67	Cl	—	[4]	4024.01	Yb	—	2	4021.019	Zr I	3 h	—
4026.657	Nd	10	3	4023.981	Zr I	30	2	4021.015	Mo	15	25
4026.625	Eu	5 w	—	4023.973	He I	—	[5]	4021.01	Eu	5 w	—
4026.541	Ti I	70	10	4023.93	Ho	4	1 h	4021.005	U	—	4
4026.502	Ru	7	1	4023.84	Eu	2	—	4020.995	Ru I	15	12
4026.5	Al II	—	[30]	4023.833	Ru I	25	60	4020.991	Pr	40	30
4026.435	Mn	50	40	4023.824	Nd	12	3	4020.905	Co I	500 w	—
4026.434	U	10	—	4023.82	I II	—	[2]	4020.897	Dy	10	4
4026.41	Tb	4	—	4023.81	Pt II	—	3	4020.872	Nd	15	15
4026.39	Ce	2	—	4023.76	In II	—	[15]	4020.771	Sm II	3	2
4026.363	He I	—	[5]	4023.74	Gd	3 h	—	4020.736	Tb	2	—
4026.325	Cb	—	10	4023.739	Cr	40	15	4020.695	U	2	2
4026.30	Ba I	2	2 h	4023.737	Pr	3	—	4020.679	Pd	5 h	—
4026.253	Ce	2	—	4023.722	Dy	10	2	4020.668	Mo	5	—
4026.20	Xe II	—	[3 whl]	4023.716	Tb	6	—	4020.540	Ce II	5	—
4026.189	He I	—	[70]	4023.688	Se I	100	25	4020.519	Er	20	1
4026.166	Cr	100	35	4023.640	Ce	4	—	4020.487	Fe	2	—

4020.4—4011.9 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
4020.47	Tb	20	3	—	4017.462	Ni I	15 Wh	—	—	4014.39	Eu	2	—	Kn
4020.455	Mo	10	10	—	4017.458	U	8	6	—	4014.35	Pr	9	3	—
4020.399	Sc I	50	20	—	4017.382	Mo	6	4	—	4014.346	Ce	2	—	—
4020.319	W	—	2	—	4017.351	W	4	5	—	4014.32	Br	—	[25]	Bl
4020.28	Pr	10	2	—	4017.311	Nd	6	3	—	4014.31	Pt II	—	2	Sh
4020.247	Hf II	6	2 h	—	4017.286	V	—	15 h	Me	4014.271	Fe I	3	1	—
4020.237	Cb	2	10 h	—	4017.27	C II	—	5	Fl	4014.18	Ho	2	4	Kn
4020.225	Pd I	15 wh	—	—	4017.252	Gd	5	3	—	4014.177	Ir	3	—	Ab
4020.169	U	3	3	—	4017.21	I I, II	—	[25]	Ke	4014.160	U	8	8	—
4020.1	bh Sr	2	—	L	4017.153	Fe I	80	50	—	4014.153	Ru	12	5	—
4020.096	Th	3	3	—	4017.093	Fe I	5	—	—	4014.150	Ce	3	—	—
4020.092	Mn	10	5	—	4017.080	Nd	4	2	—	4014.09	Tb	4	—	—
4020.062	Nd	6 d	3 d	—	4016.985	Zr I	15	—	—	4013.997	Ir I	4	—	Ab
4020.06	Cl II	—	[15]	Ks	4016.975	Ti I	12	2	—	4013.995	Ne I	—	[2]	Ps
4020.028	Ir	80	100	—	4016.883	Co I	10	5 h	—	4013.945	Co I	300	—	—
4020.015	Ne I	—	[2]	Ps	4016.87	Tb	5	—	—	4013.941	Ce	3	—	—
4019.976	Sm II	30	15	—	4016.846	U	6	8	—	4013.935	Nd	5	3	—
4019.897	Ce	8	3	—	4016.828	Co	5	—	me	4013.93	In II	—	[80]	Ps
4019.84	Pr	15	8	—	4016.821	V	—	15 wh	Me	4013.92	Gd	10	—	m
4019.827	Sm II	8	8	—	4016.76	In II	—	[2]	Ps	4013.88	Ca	2	2 h	Ad
4019.809	Nd	10	8	—	4016.753	Ru I	7	—	—	4013.87	A	—	[200]	Rt
4019.805	W	—	5	—	4016.748	Pr	25	20	—	4013.826	Dy	12	2	Kn
4019.789	Mo	10	—	—	4016.703	Eu	8	—	—	4013.824	Fe	200	—	—
4019.732	Gd I	15	10	—	4016.702	Mo	5	5	—	4013.817	Gd	25	3	—
4019.72	Se I	—	[20]	Rd	4016.665	Mn	8	5	—	4013.80	P	—	[30]	Gu
4019.712	Eu	3	—	—	4016.527	W	10	12	—	4013.80	Mg II	2	—	Fl
4019.66	Tb	2	—	—	4016.429	Fe I	15	4	—	4013.795	Fe I	80	40	—
4019.639	Pb	6	6	—	4016.419	Ce	2	—	—	4013.794	I	—	[15]	Ke
4019.553	Ru I	12	8	—	4016.36	Tb	10	1	—	4013.738	Ru I	10	5	—
4019.50	Se II	—	[10]	Bl	4016.341	U	12	8	—	4013.647	Ce	3	—	—
4019.48	Dy	5	2	Ed	4016.304	Th	5	5	—	4013.647	Fe I	8	1	—
4019.480	Ce	6	1	—	4016.284	Ti I	30	5	—	4013.584	Ti I	70 h	7 h	—
4019.45	P II	—	[50]	Gu	4016.24	In II	—	[50]	Ps	4013.55	Eu	2 W	—	—
4019.44	Pr	10	3	—	4016.15	Ca	2 wh	2	Ad	4013.54	Ta	5	—	Ks
4019.35	Yb	—	7	Me	4016.12	I	—	[3]	Ke	4013.505	Ru I	15	12	—
4019.302	Co I	80	—	—	4016.118	Sm	—	2	—	4013.49	In II	—	[30]	Ps
4019.280	Ce II	4	—	—	4016.109	W	6	4	—	4013.431	U	2	2 h	—
4019.231	W	18	15	—	4016.103	Ce	3	—	—	4013.43	Pr	15	8	—
4019.203	U	6	8	—	4016.079	Cb	5	30	—	4013.430	Gd	5	—	—
4019.193	Ce	2	—	—	4016.062	Mo	—	10	Pu	4013.35	Nd	3	3	—
4019.140	Co I	5	—	—	4016.05	Tb	3	—	—	4013.288	U	2	2	—
4019.137	Th	8	8	—	4016.050	Au II	10	15	—	4013.276	Tb	20 d	—	Kn
4019.130	Fe I	15	—	—	4016.046	U	5	6	—	4013.270	Cb	3	5	—
4019.12	Tb	40	5	—	4016.004	Sm	15	—	Kn	4013.265	Ce	2	—	—
4019.046	V	—	6	—	4015.94	I I	—	[8]	Db	4013.264	Th	5	5	—
4019.046	Ni I	5	—	—	4015.93	Tb	8	1	—	4013.23	Pr	10	4	—
4019.046	Mo	2	4	—	4015.877	Ce	20	4	—	4013.224	Nd	10	5	—
4019.044	Ce	15	4	—	4015.815	Cu I	7 wh	—	Hs	4013.21	Mo	1	40	Ex
4018.990	U	25	15	—	4015.80	In II	—	[2]	Ps	4013.19	Ta	5	1	—
4018.919	Ce	2	—	—	4015.789	Ir	4	2	—	4013.183	W	6	5	—
4018.88	Ca	—	4	—	4015.765	Sm II	8	4	—	4013.029	U	8	—	—
4018.826	Nd	15	10	—	4015.715	Ce	2	—	—	4012.96	In II	—	[10]	Ps
4018.6	Bl II	—	2	Cf	4015.625	Tb	4	—	—	4012.96	Se I	—	[150]	Rd
4018.539	Sm II	4	5	—	4015.596	Gd I	4	—	—	4012.91	Pr	8	1	—
4018.52	Se II	—	[70]	Bl	4015.579	Er	18	1	—	4012.87	Tb	6	1	—
4018.511	Ce	2	—	—	4015.557	Nd	10	8	—	4012.82	Dy	5	2	Ed
4018.44	Tb	2	—	—	4015.50	Tb	9 w	1	—	4012.816	Eu	20	25	—
4018.409	Re	25	—	—	4015.393	La I	100	2 h	—	4012.806	Ti I	12	1	—
4018.400	Eu	10	4	—	4015.389	Pr	50	30	—	4012.80	Mo	3	2	Ex
4018.400	Ce	2	—	—	4015.384	Ti I	70 h	10 h	—	4012.708	U	2 h	2	—
4018.383	Zr II	8	5	—	4015.247	Ta	8	2	—	4012.704	Nd	15	10	—
4018.33	Br I	—	[4]	Ks	4015.240	U	10	—	—	4012.58	Er	4	2	m
4018.309	W	2	3	—	4015.224	Co	2	2	m	4012.523	Dy	4	—	Kn
4018.282	U	8	3	—	4015.22	Gd	5	—	—	4012.51	Mo	3	3	Ex
4018.275	Fe I	50	7	—	4015.216	W	25	30	—	4012.497	Th	15	15	—
4018.257	Os	60	4	—	4015.21	Tb	3	—	—	4012.469	Cr	70	60	—
4018.227	Ce II	2	—	—	4015.18	Dy	10	2	Kn	4012.45	Tb	5	—	—
4018.202	Cr I	35	8	—	4015.06	Cl	—	[10]	Bl	4012.391	Ti II	35	50	—
4018.121	Zr	25	—	—	4015.037	Os	20	5	—	4012.388	Ce I, II	60	20	—
4018.102	Mn	80	60	—	4014.99	Cs	—	[10]	Bs	4012.270	Mo	3	3	—
4018.10	Ho	3	1 h	Ex	4014.939	W	8	6	—	4012.260	Re	25	—	—
4018.066	Ce	2	—	—	4014.926	Cb	5	8	—	4012.253	Er	12	—	—
4017.83	Tb	4	1	—	4014.901	Eu	3 w	—	—	4012.252	Zr I	20	—	—
4017.769	Ti I	70 h	8	—	4014.899	Ce II	60	12	—	4012.250	Nd	80	40	—
4017.76	Dy	6	2	Ed	4014.85	Re	2 h	—	—	4012.168	Cb	—	100	—
4017.75	Rn	—	[150]	Rc	4014.816	U	12	2	—	4012.161	U	6	4	—
4017.731	Eu	3	—	—	4014.77	Se I	—	[70]	Rd	4012.160	Co I	2	—	—
4017.723	U	25	25	—	4014.713	Dy	18	4	Kn	4012.139	Ce	4	—	—
4017.717	Gd	10	8	—	4014.668	Cr	40	8	—	4012.111	Ta	5 h	2 h	—
4017.714	Er	3 d	—	—	4014.66	Pr	10	2	—	4012.10	K II	—	[20]	Bn
4017.596	Ce II	10 s	—	—	4014.658	Ir	8	2	—	4012.096	W	—	5	—
4017.582	Eu	25 W	25	—	4014.655	Eu	3	—	—	4011.966	Mo	25	25	—
4017.559	Cb	3	10	—	4014.63	Ta	6 h	1	Ks	4011.944	Hf	3	—	—
4017.509	K II	—	[15]	Dm	4014.534	Fe	200	100	S	4011.905	Mn	12	10	—
4017.495	Th	8	8	—	4014.489	Sc II	20	8	—	4011.9	Rb	—	[15]	Dr

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
4011.88	Se I	—	[200]	Rd	4008.754	Nd	12	10	—	4006.105	Eu	2	—	—
4011.809	W	4	3	—	4008.753	W I	45	45	—	4006.10	I	—	[8]	Bl
4011.78	U	10	5	—	4008.714	Pr	150	50	—	4006.071	Dy	10	2	Kn
4011.773	Ce	2	—	—	4008.70	U	2	1	—	4006.049	Mo	20	20	—
4011.752	Th	15	15	—	4008.667	Mo	—	20	—	4005.971	Ti I	35	3	—
4011.729	Ru	7	—	—	4008.664	Ce	8	—	—	4005.96	Tb	9	1	—
4011.728	Fe I	2	—	—	4008.49	Dy	5	—	Ed	4005.927	Cb	2	5 h	—
4011.719	Sm II	8	4	—	4008.48	Kr II	—	[10 whl]	Me	4005.895	W	7	6	—
4011.683	Eu II	25	—	—	4008.46	Hf II	5	8	—	4005.840	Dy	12	2	Kn
4011.68	Te	—	[30]	Bl	4008.446	Ce	6	—	—	4005.75	Mo	3	3	Ex
4011.560	Ce II	15	3	—	4008.416	Nd	5	3	—	4005.712	V II	10	30	—
4011.534	Ti I	4	—	—	4008.331	Gd I	15	10	—	4005.698	U	25	3	—
4011.532	Pr	5	1	—	4008.330	Sm	8	10 h	—	4005.640	Ru I	25	30	—
4011.531	Mn	15	15	—	4008.280	Cb	5	10	—	4005.639	Ce	20	6	—
4011.514	Re	35	—	—	4008.269	Ru I	20	20	—	4005.58	Br	—	[4]	Bl
4011.450	U	8	10	—	4008.216	Th	10	8	—	4005.580	Ir I	20	3	Ab
4011.412	Fe I	5	1	—	4008.185	Er	8	1	—	4005.57	Kr II	—	[30 hl]	Me
4011.309	V I	9	2	—	4008.169	V II	2	10	Me	4005.55	Tb	100 d	125	m
4011.296	Ce	4	—	—	4008.091	Sm II	10	3	—	4005.549	Th	20 w	30 w	—
4011.295	Dy	12	8	Kn	4008.08	Kr II	—	[25]	Me	4005.404	W	8	10	—
4011.23	A	—	[5]	Rt	4008.062	Ti I	50	7	—	4005.32	Ag	10	2	Wx
4011.069	Nd	15	10	—	4008.054	Mo	4	5	—	4005.246	Fe I	250	200	S
4011.024	W	4	5	—	4008.052	Ir I	12	2	Ab	4005.244	Ce	18	—	—
4010.99	N	—	[5]	Du	4008.020	Mn	15	5	—	4005.155	Os	35	20	—
4010.947	Fe I	2	1	—	4007.98	Eu	6	—	m	4005.12	Mo	—	20	Ex
4010.941	Co I	3 h	2	Dn	4007.967	Er	35	7	—	4005.095	Th	3	1	—
4010.869	Tb	7	—	Kn	4007.96	Ho	4	3	Ex	4005.020	Ir	25	—	Ab
4010.85	Cu I	6	—	Ex	4007.943	Co I	3	—	—	4004.932	Re	30	—	—
4010.816	U	10	1	—	4007.934	U	8	3	—	4004.93	Gd	8	3	m
4010.805	Eu	2	—	—	4007.90	Se II	—	[150]	Bl	4004.868	Zr I	20	—	—
4010.795	Ce	2	—	—	4007.78	S II	—	[5]	Hn	4004.843	Fe	10	7	—
4010.756	Nd	4	—	—	4007.78	Pr	8	3	—	4004.834	In II	—	[10]	Ps
4010.741	Tb	5	—	Kn	4007.77	Dy	12	2	Kn	4004.830	Nd	10	3	—
4010.66	As II	—	10	Ro	4007.75	Tb	3	—	—	4004.747	W	—	6	—
4010.645	Tb	2	—	—	4007.689	U	2	4	—	4004.714	Pr	20	25	—
4010.643	Pr	8 r	5 r	Kn	4007.687	Eu	5 d	—	—	4004.709	In II	—	[15]	Ps
4010.54	Er	6 d	2	m	4007.662	La	3	2 h	—	4004.618	Tb	2	—	Kn
4010.54	Cs	—	[10]	Bs	4007.608	In II	—	[10]	Ps	4004.617	U	3	5	—
4010.454	Nd	20	6	—	4007.601	Zr I	25	1	—	4004.592	Eu	5	—	—
4010.422	Eu	20 W	—	—	4007.588	Ce	15	4	—	4004.582	Ce	12	3	—
4010.375	W	9	8	—	4007.543	In II	—	[15]	Ps	4004.579	Er	4 d	—	—
4010.353	U	2	2 h	—	4007.535	Ru	20	10	—	4004.528	In II	—	[30]	Ps
4010.30	Mo	—	10	Ex	4007.486	Sm II	50	25	—	4004.50	Tb	5	1	—
4010.26	Ca	2	2 h	Ad	4007.470	Pd I	5 h	—	—	4004.48	Dy	5	—	Kn
4010.18	Eu	8	4	—	4007.469	U	2	2	—	4004.415	U	6	—	—
4010.136	Ce	15	3	—	4007.451	Ce	4 h	—	—	4004.399	Zr I	10	—	—
4010.136	Mo	5	5	—	4007.45	Mo	4	5	Ex	4004.392	Sb	—	3	Sp
4010.08	Dy	10	4	Kn	4007.435	Nd	20	20	—	4004.33	Dy	8	2	Ed
4010.064	Tb	8	—	—	4007.36	Yb	5	—	m	4004.264	Nd	15	10	—
4009.984	Ni I	3	—	—	4007.35	Hf II	5	4 h	m	4004.245	Sm II	8	3	—
4009.97	Pr	10	3	—	4007.33	Br	—	[10]	Bl	4004.063	U	15	20	—
4009.90	C II	—	10	Fl	4007.273	Fe I	80	50	—	4004.047	Ce	6 h	—	—
4009.854	Ir I	8	2 h	Ab	4007.233	Ta	4	2	—	4004.046	Er	5	—	—
4009.806	W	—	9	—	4007.192	Ti I	15	1	—	4004.024	Os	50	6	—
4009.785	Er	3	—	—	4007.137	Dy	6	—	Kn	4004.010	Nd	20	15	—
4009.78	Hf	5	—	Me	4007.037	Mn	10	5	—	4003.921	Cr	30	12	Hi
4009.75	Sr	—	2	Sd	4007.027	Th	20	20	—	4003.91	Tb	5	1	—
4009.717	Fe I	120	100	—	4007.022	Ce	2	—	—	4003.89	S II	—	[8]	Hn
4009.714	Cb	5	10	—	4007.003	W	—	6	—	4003.855	Gd	8	8	—
4009.663	Ti I	60	25	—	4006.995	Cb	—	5	—	4003.836	W	—	7	—
4009.58	Al II	—	[4]	Sy	4006.98	Sm	3	—	—	4003.806	Ti I	50	70	—
4009.55	Ce	2	1 h	—	4006.969	Gd I	3	—	—	4003.771	Ce	40	18	—
4009.546	Th	3	—	—	4006.95	Mo	—	5	Ex	4003.767	Fe	30	80	—
4009.54	Tb	10	1	—	4006.835	Ta	30	20	—	4003.76	Tb	8	1	—
4009.410	U	4	8	—	4006.834	Sm II	8	5	—	4003.715	Eu	18	25	—
4009.39	S II	—	[3]	Hn	4006.772	Cs	—	[10]	Sv	4003.704	Ta	15	5	—
4009.387	Zr	3	—	—	4006.761	Nd	5 d	2 d	—	4003.693	Sm	6	3	—
4009.367	Nd	8	5	—	4006.761	Fe I	7	2	—	4003.605	Co I	15	—	—
4009.366	Mo	20	25	—	4006.704	Pr	10	5	Kn	4003.601	Ce	3	—	—
4009.27	Tb	2	—	—	4006.70	Mo	5	5	Ex	4003.544	V I	9	2	—
4009.270	He I	—	[10]	Ps	4006.68	Cd	—	5	Tk	4003.48	Os	50	6	—
4009.24	Pr	5	2	—	4006.631	Fe	20	15	—	4003.454	Sm II	30	20	—
4009.21	Gd	50	2	m	4006.598	Ru I	25	15	—	4003.452	Mo	3	3	—
4009.193	Tb	5	—	Kn	4006.585	Sm II	8	8	—	4003.405	U	6	10	—
4009.170	U	8	15	—	4006.56	Eu	6	—	—	4003.38	Gd	3 h	—	—
4009.165	Er	15	1	—	4006.537	Cs	—	[30]	Sv	4003.36	Ho	4	1	Kn
4009.066	Th	10	8	—	4006.50	Te	—	[100]	Bl	4003.35	Ca	2	2 h	Ad
4009.063	Ce	12 l	—	—	4006.395	U	3	5	—	4003.33	Cr	—	20	Ex
4008.967	Ir I	5	—	Ab	4006.386	Nd	5	3	—	4003.320	Ce	2	—	—
4008.928	Ti I	80	35	—	4006.386	Th	10	10	—	4003.316	Th	15	15	—
4008.922	Gd	20	3	—	4006.34	As II	—	50	Ro	4003.26	Pr	3	1	—
4008.918	U	8	—	—	4006.315	Fe	60	35	—	4003.255	Mn	20	5 h	—
4008.873	Fe	5	1	—	4006.301	Ca	2	—	—	4003.196	U	8	5	—
4008.872	Eu	8 W	2	—	4006.27	Hg	—	[30]	Ps	4003.171	Nd	10	3	—
4008.76	Br	—	[20]	Bl	4006.136	Ni	10	—	—	4003.170	Ce II	10	1	—

4003.1—3994.7 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
4003.111	Th	10	10	-	-	4000.16	Gd	10 h	-	-	Kn	3997.054	Pr	100	40	-	-
4003.10	Hg	-	[20]	-	Ps	4000.093	W	-	8	-	-	3996.974	Ir	2	-	-	-
4003.096	Zr I	20	1	-	-	4000.078	V I	8	2	-	-	3996.972	Fe	40	20	-	-
4003.08	Se II	-	[60]	-	Bl	4000.01	Tb	5	1	-	-	3996.92	Re	3 h	-	-	-
4003.038	Cu I	40	1 h	-	Ha	3999.98	N	-	[15]	-	Du	3996.909	Sm	2	2	-	-
4002.974	Ce II	8	1	-	-	3999.950	U	6	8	-	-	3996.805	Os	50	10	-	-
4002.97	Mo	-	20	-	-	3999.945	Cr	3	-	-	-	3996.80	Hf II	1	5	-	Me
4002.938	V II	6	80	-	-	3999.864	Mo	-	5	-	-	3996.768	Ce	4	-	-	-
4002.91	Eu	15	-	-	-	3999.82	Dy	3	2	-	Ed	3996.70	Ho	6	4	-	Ex
4002.89	Pr	3	1	-	-	3999.709	Cb	1	5	-	-	3996.699	Dy	200	80	-	-
4002.813	Ce	20	4	-	-	3999.679	Cr	40	10	-	-	3996.696	Tb	9	3	-	-
4002.785	W	-	5	-	-	3999.62	Br	-	[8]	-	Bl	3996.695	Er	25	-	-	-
4002.70	Ho	3	1 h	-	Kn	3999.56	Ho	6	2	-	Ex	3996.69	Kr II	-	[3]	-	Me
4002.663	Fe I	2	-	-	-	3999.407	Tb	12	15	-	-	3996.686	Pr	20	4	-	-
4002.624	Eu	5	-	-	-	3999.393	Ru	3	-	-	-	3996.65	I I	-	[5]	-	Bl
4002.592	U	6	-	-	-	3999.391	Pr	2	-	-	-	3996.649	Ti	12	-	-	-
4002.58	Tb	50	5	-	-	3999.383	Nd	20	6	-	-	3996.607	Sc I	40	10	-	-
4002.56	Eu	30	2	-	Kn	3999.359	Ti I	30	5	-	-	3996.593	Tb	3	-	-	-
4002.550	Zr I	18	-	-	-	3999.283	Ta	30	20 d	-	-	3996.574	Pt I	50	-	-	-
4002.490	Ti I	40	5	-	-	3999.240	Ce II	80	20	-	-	3996.516	Tm	200	40	-	Me
4002.35	Xe II	-	[40 whl]	-	Hu	3999.191	V	-	40 h	-	Me	3996.509	Ru I	10	4	-	-
4002.338	U	10	18	-	-	3999.188	Pr	50 d	40 d	-	-	3996.5	bh Ca	4	-	-	L
4002.262	Cb	2	5 h	-	-	3999.183	U	10	3 h	-	-	3996.487	Ce II	10	-	-	-
4002.257	Ce	4	-	-	-	3999.182	Cb	5	10	-	-	3996.450	Ir I	8	2	-	-
4002.18	Tb	40 w	2	-	-	3999.181	W	4	5	-	-	3996.381	Al II	-	[10]	-	Sy
4002.162	Mn	15	5	-	-	3999.17	Er	5	2	-	-	3996.359	Cd	2 h	-	-	-
4002.128	U	4	-	-	Ab	3999.13	Ca	2	2 h	-	Ad	3996.325	Ge	100	100	-	-
4002.07	Se	-	[60]	-	Bt	3999.10	Br I	-	[3]	-	Bl	3996.323	Al II	-	[2]	-	Sy
4002.020	Eu	4	-	-	-	3998.968	Zr II	30	30	-	-	3996.274	Cr	2	-	-	-
4002.003	Pr	3	1	-	Kn	3998.940	Dy	5 h	-	-	Kn	3996.251	Mo	3	2	-	-
4001.976	U	-	2	-	-	3998.933	Os	80	12	-	-	3996.182	Al II	-	[2]	-	Sy
4001.97	Gd	8	1	-	-	3998.892	Tb	5	-	-	-	3996.171	Ta	100	30 h	-	-
4001.913	Mn	15	10	-	-	3998.860	Cr	25	2	-	-	3996.159	Al II	-	[18]	-	Sy
4001.892	W	-	15	-	-	3998.828	Ir	2	-	-	Ab	3996.154	Rh I	25	10	-	-
4001.740	Th	10	8	-	-	3998.820	U	3	5	-	-	3996.075	Al II	-	[2]	-	Sy
4001.732	Ce	5	2	-	-	3998.818	Eu	3 W	-	-	-	3996.066	Th	15	10	-	-
4001.682	Cs	-	[20]	-	Sv	3998.79	S II	-	[60]	-	Hn	3996.05	Xe II	-	[2]	-	Hu
4001.667	Fe I	80	50	-	-	3998.755	W	8	8	-	-	3995.994	Eu	3	2	-	-
4001.63	Gd	15	-	-	Kn	3998.750	Ce	2	-	-	-	3995.989	Fe I	60	20	-	-
4001.555	Ce	20 s	5 s	-	-	3998.730	V I	100	25	-	-	3995.977	Ru I	30	30	-	-
4001.47	Pr	15	5	-	-	3998.697	U	6	4	-	-	3995.972	U	10	8	-	-
4001.45	Br	-	[4]	-	Bl	3998.690	Pr	4	2	-	-	3995.860	Al II	-	[30]	-	Sy
4001.444	Cr	200	80	-	-	3998.689	Nd	40	15	-	-	3995.846	Pr	4	2	-	-
4001.38	La I	3	-	-	Me	3998.640	Ti I	150	100	-	-	3995.786	Tb	8	-	-	-
4001.373	W	9	9	-	-	3998.631	Mo	-	25	-	-	3995.775	U	4	3	-	-
4001.31	Eu	6	2	-	-	3998.51	Hf II	-	4 d	-	Me	3995.755	Eu	12	-	-	-
4001.280	Tb	5	-	-	-	3998.444	Cb	2	5	-	-	3995.754	Er	4	-	-	-
4001.246	U	10	3	-	-	3998.441	Pr	9	3	-	-	3995.752	Ce	6	-	-	-
4001.24	Gd	80	3	-	-	3998.404	Tb	7	-	-	-	3995.750	La II	600	300	-	-
4001.227	Zr I	9	-	-	-	3998.353	Sm	10	2	-	-	3995.7	Rn I	-	[3]	-	Rs
4001.200	K II	-	[40]	-	Dm	3998.286	Mo	8	5	-	-	3995.68	Re I	10 h	-	-	-
4001.19	Fe I	5	-	-	-	3998.28	Ho	40	6	-	Ex	3995.664	Ba I	18	5	-	-
4001.183	Mn	12	5	-	-	3998.242	U	5	18	-	-	3995.607	Rh I	15	10	-	-
4001.180	V	-	2	-	-	3998.235	Ce	2	-	-	-	3995.590	Sm	8	3	-	-
4001.130	Cb	10	15	-	-	3998.159	W	7	6	-	-	3995.584	Tm	100	-	-	Me
4001.087	Zr I	10	-	-	-	3998.155	Nd	20	12	-	-	3995.531	U	4	-	-	-
4001.065	Th	10	5	-	-	3998.12	I	-	[5]	-	Bl	3995.482	Mo	3	2	-	-
4001.055	Ce II	20	2	-	-	3998.10	Dy	3	-	-	Kn	3995.428	Tb	2	-	-	-
4000.91	Pr	20	8	-	-	3998.055	Fe I	150	100	-	-	3995.423	Ce II	4	-	-	-
4000.910	U	5	6	-	-	3997.97	S	-	[8]	-	Hn	3995.310	Co I	1000 R	20	-	-
4000.89	Yb	-	6 h	-	Me	3997.963	Pr	20	9	-	-	3995.291	Ir I	6	-	-	-
4000.807	Eu	3	-	-	-	3997.95	Kr II	-	[100 whl]	-	Me	3995.290	Ta	3 l	-	-	-
4000.799	Ce	4	1	-	-	3997.929	Nd	20	10	-	-	3995.268	Er	6	-	-	-
4000.732	U	6	1	-	-	3997.92	Ba I	5	-	-	Sd	3995.244	Nd	20	-	-	-
4000.72	Kr I	-	[2]	-	Me	3997.906	Co I	200	20	-	-	3995.200	Fe	10	-	-	-
4000.698	Eu	3	-	-	-	3997.864	Th	10	10	-	-	3995.196	Ir I	3	-	-	-
4000.694	W	12	10	-	-	3997.775	Gd	20	30	-	-	3995.18	Cl II	-	[2]	-	Mu
4000.675	Ce	5	1	-	-	3997.756	W	5	6	-	-	3995.158	In	-	18 Wh	-	-
4000.63	Cr	5	-	-	Ex	3997.716	Ce	18	2	-	-	3995.142	Tb	3	-	-	-
4000.62	Ho	4	-	-	Kn	3997.7	bh Sr	4	-	-	L	3995.10	K II	-	30	-	Bn
4000.605	Cb	2	50	-	-	3997.483	Ce	5	-	-	-	3995.07	Eu	4 w	-	-	Kn
4000.562	Nd	8 d	3 d	-	-	3997.454	Th	8	8	-	-	3994.995	N II	-	[300]	-	Fl
4000.55	Xe	-	[3 h]	-	Hu	3997.406	Tb	10	-	-	-	3994.980	U	8	20 wh	-	-
4000.497	Mo	8	8	-	-	3997.396	Fe I	300	150	-	-	3994.979	I	-	[35]	-	Ke
4000.493	Nd	10 d	5 d	-	-	3997.325	U	5	5	-	-	3994.929	Os	30	5	-	-
4000.478	Pr	8	4	-	Kn	3997.268	Ce	3	-	-	-	3994.90	Sb	-	10	-	Dv
4000.46	Tb	15	2	-	-	3997.214	Mn	12	25	-	-	3994.886	V I	35	-	-	-
4000.454	Dy	400	300	-	Kn	3997.18	Rn I	-	[3]	-	Re	3994.858	Er	5	-	-	-
4000.452	Fe	35	10	-	-	3997.17	Ho	6	4 h	-	Ex	3994.834	Pr	300	25	-	-
4000.452	Er	35	6	-	-	3997.16	P	-	[70]	-	Gu	3994.83	Kr II	-	[100]	-	Me
4000.45	Mo	5	5	-	Ex	3997.134	W	6	7	-	-	3994.82	Kr I	-	[3]	-	Me
4000.386	Ho	6	5	-	-	3997.133	Nd	2	1	-	-	3994.81	Al II	-	[10]	-	Rt
4000.287	Th	8	3	-	-	3997.13	Br	-	[12]	-	Bl	3994.807	Ce	3	-	-	-
4000.266	Fe I	8	1	-	-	3997.122	V II	25	40	-	-	3994.762	W	4	2	-	-
4000.190	Pr	50	25	-	-	3997.088	U	12	2	-	-	3994.76	Rn I	-	[10]	-	Rs

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3994.718	U	2	2	-	-	3991.94	Kr II	-	[15]	Me	-	3989.23	Zn II	-	[100]	Va	-
3994.704	Ti I	25	-	-	-	3991.89	Dy	5	-	-	Kn	3989.23	Br	-	[3]	Bl	-
3994.684	Nd	80	40	-	-	3991.890	Pr	25	10	-	-	3989.137	Pr	10	1	-	-
3994.68	Eu	5	-	-	-	3991.854	Mo	2	3	-	-	3989.113	U	2	1	-	-
3994.628	Mo	3	3	-	-	3991.831	Co I	15	-	-	-	3989.06	Sc II	3	2	m	-
3994.573	Ce	6	-	-	-	3991.775	K II	-	[15]	Dm	-	3989.010	Fe	15 wh	1 wh	-	-
3994.572	U	4	-	-	-	3991.743	Nd	60	40	-	-	3988.98	Rn I	-	[8]	Rs	-
3994.560	Ru I	4	-	-	-	3991.737	Th	8	3	-	-	3988.978	Ir I	4	-	-	-
3994.552	Th	5	10	-	-	3991.705	Gd	5	5	-	-	3988.89	Dy	5	-	m	-
3994.537	Co I	60	-	-	-	3991.686	Co I	60	6	-	-	3988.885	U	12	15	-	-
3994.535	Dy	5	-	-	Kn	3991.678	Cb	15	20	-	-	3988.878	Co I	2	-	-	-
3994.51	Sn II	-	[2]	Mc	-	3991.673	Cr I	100	50	-	-	3988.852	Th	10	10	-	-
3994.474	La II	-	5	-	-	3991.62	Si	-	2	Sy	-	3988.833	V I	70	35	-	-
3994.461	Cb	-	2 h	-	-	3991.617	U	4	6	-	-	3988.812	Nd	20	6	-	-
3994.456	Nd	2	-	-	-	3991.596	Mn	20	25	-	-	3988.701	Ta	15	10	-	-
3994.426	Cb	4	-	-	-	3991.590	Tb	10 d	-	-	-	3988.681	Zr II	15	-	-	-
3994.342	Pr	4	-	-	-	3991.580	Re	20	-	-	-	3988.671	Mn	12	12	-	-
3994.294	U	6	6	-	-	3991.543	Co I	30	-	-	-	3988.656	Cr	5	-	-	-
3994.179	Gd	8	6	-	-	3991.514	W	5	4	-	-	3988.644	U	8	8	-	-
3994.14	Re	5 h	-	-	-	3991.498	U	4	-	-	-	3988.601	Th	10	8	-	-
3994.121	Fe I	25	10	-	-	3991.487	Os	40	10	-	-	3988.583	Eu	5	-	-	-
3994.099	Nd	20	2	-	-	3991.468	V II	-	6	Me	-	3988.518	La II	1000	800	-	-
3994.040	Tb	4	-	-	-	3991.412	Nd	-	4	-	-	3988.518	Ce	8 h	-	-	-
3994.01	Pr	20	3	-	-	3991.391	Mo	6	8	-	-	3988.33	Te	-	[5]	Bl	-
3993.968	Cr I	60	20	-	-	3991.39	Br I	-	[4]	Ks	-	3988.293	U	2	1	-	-
3993.952	Ni I	30 h	-	-	-	3991.38	Lu	3	-	Me	-	3988.253	Eu	10 W	2	-	-
3993.934	Mo	5	5	-	-	3991.331	Dy	40	-	-	-	3988.21	Dy	4	-	m	-
3993.928	Eu	8	2	-	-	3991.326	Ce II	5	-	-	-	3988.18	A	-	[5]	Rt	-
3993.903	W	7	6	-	-	3991.258	Kr I	-	[10]	IHu	-	3988.179	Os	50	12	-	-
3993.863	Cs	-	[4]	Sv	-	3991.224	W	9	8	-	-	3988.157	Cb	5	10	-	-
3993.822	Ce	50	6	-	-	3991.223	Ce	2	-	-	-	3988.029	U	8	12	-	-
3993.815	U	12	4	-	-	3991.158	Er	15	-	-	-	3988.019	Pr	25	7	-	-
3993.770	Yb	3	-	-	-	3991.15	Eu	3 W	-	Kn	-	3988.015	Th	50	30	-	-
3993.725	Th	8	5	-	-	3991.131	Zr II	100	60	-	-	3988.007	W	7	6	-	-
3993.71	Ho	10	4	Ex	-	3991.123	Cr I	200	60	-	-	3988.00	Ho	-	6	Ex	-
3993.575	Dy	8	-	Kn	-	3991.079	Kr I	-	[20]	Hu	-	3987.994	Yb	1000 R	500 R	-	-
3993.549	Tb	30 d	8	-	-	3991.039	Re I	25	-	-	-	3987.990	Ce	5	-	-	-
3993.531	Ru	10	5	-	-	3991.017	Sm	10	2	-	-	3987.98	Ho	8	-	Ex	-
3993.526	S II	-	[50]	Hn	-	3990.94	S II	-	[40]	Hn	-	3987.951	Er	100 r	20	-	-
3993.404	Ba I	100 R	50 r	-	-	3990.895	Yb	60	20	-	-	3987.929	Re	3	-	-	-
3993.402	Ce	3	-	-	-	3990.838	Mo	-	30	-	-	3987.89	Cr	3	-	-	-
3993.302	Sm II	25	25	-	-	3990.69	Ca	3	8	Ad	-	3987.842	Gd	50	25	-	-
3993.291	Cu II	-	4 h	-	-	3990.687	Ce	6	1	-	-	3987.83	Eu	20 w	-	-	-
3993.265	U	2	2	-	-	3990.667	Cb	2	5	-	-	3987.829	Ir	12	-	-	-
3993.227	Gd	15	10	-	-	3990.663	Re I	15	-	-	-	3987.810	Nd	25	6	-	-
3993.190	Ce	5	-	-	-	3990.66	Kr II	-	[15 hl]	Me	-	3987.804	Tb	4	-	-	-
3993.133	Zr	3 h	-	-	-	3990.631	Tb	12	3	-	-	3987.795	Ru	3	50	-	-
3993.106	Fe	2	-	-	-	3990.566	V I	125	40	-	-	3987.78	Kr II	-	[25]	Me	-
3993.051	Mo	5	5	-	-	3990.558	Th	8	5	-	-	3987.720	U	2	2	-	-
3992.981	Nd	6 d	-	Kn	-	3990.423	U	18	20	-	-	3987.713	Th	10	8	-	-
3992.960	U	2	3	-	-	3990.415	Ce	3	-	-	-	3987.699	Ce	2 l	-	-	-
3992.92	Pr	15	3	-	-	3990.396	Ta	6	5 h	-	-	3987.671	Tb	6	-	-	-
3992.913	Ce	15	3	-	-	3990.381	W	-	10	-	-	3987.663	Er	4	-	-	-
3992.845	Cr I	150	70	-	-	3990.379	Fe	70	25	-	-	3987.657	Ir I	4	-	-	-
3992.801	V I	60	20	-	-	3990.35	Dy	6	-	Kn	-	3987.610	Ti	8	12	-	-
3992.750	W	7	6	-	-	3990.33	Xe II	-	[30 whl]	Hu	-	3987.55	Ho	3	-	Kn	-
3992.725	Re I	20	-	-	-	3990.299	Co I	80	10	-	-	3987.524	W	5	4	-	-
3992.711	Ce	3	-	-	-	3990.221	Tb	3	-	-	-	3987.508	Ce	2 s	-	-	-
3992.698	Gd	15	15	-	-	3990.19	Cl II	-	[20]	Ks	-	3987.5	Pb II	-	5	Gs	-
3992.661	Ta	2 h	-	-	-	3990.184	Ti I	10 w	1 w	-	-	3987.497	Yt I	2	3	-	-
3992.661	Ti	3	-	-	-	3990.155	U	5	10	-	-	3987.464	Mn	15	15	-	-
3992.574	Nd	30	20	-	-	3990.106	Ce II	20	2	-	-	3987.426	Nd	20	20	-	-
3992.55	Ho	4	-	Kn	-	3990.103	Nd	40	20	-	-	3987.424	Sm II	15	8	-	-
3992.539	U	10	8	-	-	3990.081	Th	5	8	-	-	3987.376	Ir	5	-	-	-
3992.505	W	-	7	-	-	3990.020	Nd	20	15	-	-	3987.373	Mo	4	5	-	-
3992.491	Mn	40	75	-	-	3990.003	Sm II	40	25	-	-	3987.371	Pr	25	15	-	-
3992.463	Zr I	3	-	-	-	3989.986	Cr	80	40	-	-	3987.286	Tb	3	3	-	-
3992.45	Dy	3	-	Ed	-	3989.955	Tb	3	3	-	-	3987.26	Eu	3 W	-	-	-
3992.400	Ti	6	-	-	-	3989.953	U	4	6	-	-	3987.226	Th	10	8	-	-
3992.39	Br I	-	[20]	Ks	-	3989.922	Mo	5	6	-	-	3987.218	Gd	100	100	-	-
3992.386	Ce II	50	8	-	-	3989.893	U	2	1	-	-	3987.171	Pr	15	3	-	-
3992.367	Eu	4	-	-	-	3989.860	Fe	30	5	-	-	3987.149	W	-	10	-	-
3992.330	Pd I	5 h	-	-	-	3989.802	V II	-	10	Me	-	3987.115	Co I	80	-	-	-
3992.278	Th	10	10	-	-	3989.763	Ti I	150	100	-	-	3987.098	Mn	30	60	-	-
3992.228	U	6	2	-	-	3989.756	Ce	4	-	-	-	3987.098	Eu	2	-	-	-
3992.206	Tb	4	-	-	-	3989.718	Pr	200	125	-	-	3987.09	Kr II	-	[5 whs]	Me	-
3992.181	Pr	25	10	-	-	3989.668	Ti I	2 h	-	-	-	3987.083	Re	6	-	-	-
3992.16	Nd	20	8	-	-	3989.506	Mo	-	25 h	-	-	3987.070	Sm II	2	2	-	-
3992.126	Ce	4	-	-	-	3989.506	Tb	5	-	-	-	3987.06	Dy	2	-	Kn	-
3992.121	Ir I	150	60	-	-	3989.499	Zr I	12	1 h	-	-	3987.058	Ce	7	-	-	-
3992.109	Cr	20	1	-	-	3989.441	Ce	20	6	-	-	3987.053	U	2	4	-	-
3992.06	A	-	[25]	Rt	-	3989.435	Ir I	25	2	-	-	3987.012	Cu II	-	3	-	-
3992.057	Zr	3	-	-	-	3989.292	U	8	1 h	-	-	3986.978	Mo	4	1	-	-
3992.051	Th	5	5	-	-	3989.287	Zr I	12	1 h	-	-	3986.945	Tb	3	-	-	-
3991.962	V	-	2	Me	-	3989.249	Gd	10	20	-	-	3986.923	Eu	6	-	-	-

3986.9—3979.4 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3986.905	Sm	8	8	-	3984.308	Ce	2	-	-	3981.94	Cl II	-	[15]	Ks
3986.851	U	-	8	-	3984.278	Ir	2	-	-	3981.938	Dy	150	100	-
3986.826	Mn	40	75	-	3984.267	Pr	20	8	-	3981.930	Er	9	1	-
3986.803	Zr I	10	-	-	3984.253	Ne I	-	[7]	Ps	3981.902	Ru	5	3	-
3986.75	Br	-	[3]	Bl	3984.249	Ta	2	5 h	-	3981.896	Ce	5	-	-
3986.733	Mg I	15 w	3	-	3984.226	Dy	80	-	-	3981.879	Tb	80	200	-
3986.687	Er	7 d	-	-	3984.225	Fe	20	-	-	3981.875	Th	3	-	-
3986.637	Th	8	8	-	3984.214	Er	12	1	-	3981.774	Fe I	150	100	-
3986.618	Eu	10	-	-	3984.208	Nd	4 d	4	-	3981.777	Cd I	10 r	-	Ps
3986.54	Br	-	[3]	Bl	3984.185	U	6	4 h	-	3981.764	Ti I	100	70	-
3986.5	Ho	5	-	Kn	3984.177	Mn	20	20	-	3981.74	Te	-	[10]	Bl
3986.438	U	2	1	-	3984.176	W	-	8	-	3981.68	Rn	-	[150]	Rc
3986.395	Ce	15	1	-	3984.140	Ni I	30 wh	-	-	3981.641	Ag I	30	20	Fn
3986.381	Ir	2	2	Ab	3984.11	Hg	6	2	Ex	3981.640	Mo	2	5	-
3986.347	Tb	10	8	-	3984.071	Hg	-	[5]	Cn	3981.596	Zr I	15 h	-	-
3986.234	Sm	3	3	-	3984.051	Tb	8	8	-	3981.539	Th	3	3	-
3986.233	Nd	30	20	-	3984.03	Hf II	4	8	m	3981.531	U	6	5	-
3986.201	Mo	5	20	-	3983.977	Hg II	-	[400]	Cn	3981.467	Ti I	2 h	-	-
3986.176	Cb	2	5	-	3983.962	Fe I	200	125	-	3981.452	Eu	3	-	-
3986.172	Fe I	125	8	-	3983.948	I	-	[25]	Ke	3981.372	Dy	4	-	Kn
3986.171	Pr	40	15	-	3983.939	Cb	-	5 h	Me	3981.35	La II	-	10 l	-
3986.134	Ce	2	-	-	3983.93	Re	5	-	m	3981.313	Eu	4	-	-
3986.115	Zr II	5	-	-	3983.920	Hg	-	[5]	Cn	3981.264	W	6 d	7	-
3986.081	Th	8	5	-	3983.908	U	5	15	-	3981.234	Ce	2	-	-
3986.08	Eu	4 W	-	-	3983.907	Cr I	200	60	-	3981.233	Cr I	100	50	-
3986.05	Dy	5	-	Kn	3983.845	Hg	-	[15]	Cn	3981.225	Er	4	-	-
3986.031	Sb II	-	5	Sp	3983.845	Tb	8	8	-	3981.216	Nd	30	15	-
3985.987	Sm II	5	6	-	3983.825	Ta	5	-	-	3981.204	Pr	2	4	-
3985.921	Ce	2	-	-	3983.7	Al II	-	[2]	Sy	3981.151	Tb	25	8	-
3985.866	Ir	2	-	-	3983.664	Dy	150	8	-	3981.110	Th	20	20	-
3985.86	P	-	[30]	Gu	3983.655	Er	20	3	-	3981.108	Eu	4	-	-
3985.80	Ho	6	4 h	Ex	3983.65	Ho	6	2	Ex	3981.104	Fe I	2	-	-
3985.795	U	25	30	-	3983.58	Nd	10	5	-	3981.097	Sm	4	4	-
3985.779	Li I	100	-	Fl	3983.580	Pr	25	8	-	3981.01	Lu	-	2 h	Me
3985.790	V	1	40	-	3983.422	Re	5 w	-	-	3981.008	Ta	2	40	-
3985.723	Mo	5	3	-	3983.398	Nd	20	8	-	3980.982	Sb II	2 h	2	-
3985.68	I I	-	[5]	Bl	3983.295	U	-	4 h	-	3980.981	Nd	20	8	-
3985.67	Gd	2	-	Kn	3983.292	Ce	10	3	-	3980.897	U	-	3	-
3985.664	W	3	6	-	3983.288	W	12	25	-	3980.883	Ce II	35	8	-
3985.659	Pr	25	9	-	3983.237	Cr	20	6	-	3980.883	Sm	8	5	-
3985.65	Eu	4 W	-	-	3983.22	Nd	6	2	-	3980.882	Mn	8	8	-
3985.64	Ho	8	4 h	Ex	3983.195	Ce	2	-	-	3980.822	Ti	8	-	-
3985.589	Ti	10 h	1	-	3983.143	Er	3	-	-	3980.800	U	10	1	-
3985.490	Pd I	2	-	-	3983.137	Sm II	100	60	-	3980.766	Th	8	10	-
3985.454	Tb	3	-	-	3983.028	Gd	40	40	-	3980.709	Mo	5	5	-
3985.45	Ti	4 h	-	-	3982.991	Eu	2 h	-	-	3980.640	W	12	15	-
3985.448	Co I	2 h	1	m	3982.979	U	4	2	-	3980.609	Er	4	-	-
3985.395	Th	5	8 h	-	3982.974	Nd	15	6	-	3980.522	V	40	35	-
3985.39	Eu	10	-	-	3982.960	W	7	6	-	3980.484	Cb	10	15	-
3985.388	Fe	125	40	-	3982.938	Tb	2	-	-	3980.453	Ce	2	-	-
3985.260	U	1	3	-	3982.907	Mn	20	30	-	3980.430	Yb	2 h	-	-
3985.252	Ti	12	1	-	3982.903	Ce II	30	6	-	3980.39	Br II	-	[25]	Bl
3985.241	Mn	75	100	-	3982.90	Ba	5	-	-	3980.35	C II	-	[12]	Fl
3985.238	Ce	4	-	-	3982.89	Ce	6	-	-	3980.31	Ca	2	2	Ad
3985.222	Eu	7	-	-	3982.870	W	5	4	-	3980.294	W	4	5	-
3985.202	Xe I	-	[30]	IMe	3982.80	Br	-	[3]	Bl	3980.293	Nd	20	8	-
3985.2	Pb II	-	[10]	Ea	3982.725	O II	-	[20]	Fl	3980.281	Tb	4	3	-
3985.19	Ag	2	20	-	3982.605	Mo	5	5	-	3980.254	Ce	6	-	-
3985.15	I II	-	[2]	Mu	3982.595	Yt II	60	100	-	3980.230	Pr	5	10	-
3985.057	Tb	4	3	-	3982.59	Cb	1 h	2	-	3980.204	Mo	15	15	-
3985.041	U	10	6	-	3982.583	Mn	20	30	-	3980.149	Er	10	-	-
3985.034	Nd	4	2	-	3982.531	U	-	2 h	-	3980.139	Mn	10	10	-
3984.977	Ta	2	-	-	3982.516	Ir	-	2 h	-	3980.127	Gd	2	-	-
3984.935	Fe	2	-	-	3982.503	Pr	15 w	6 w	-	3980.042	Eu	3	-	-
3984.923	Eu	8	-	-	3982.484	Ti I	80	30	-	3980.02	Br II	-	[12]	Bl
3984.859	Th	5 w	2 w	-	3982.45	As	-	25	Ro	3979.95	Dy	5	-	Ed
3984.858	Ru I	60	70	-	3982.333	Er	4	-	-	3979.941	U	4	-	-
3984.85	Hf II	3	4 h	Me	3982.269	Nd	8	4	-	3979.933	Ce	12	-	-
3984.815	Tb	5	-	-	3982.238	Ce	8	-	-	3979.86	S II	-	[35]	Hn
3984.814	Cb	2	5	-	3982.236	Th	3	3	-	3979.798	Cr I	80	20	-
3984.803	Gd	2	-	-	3982.230	Ru	4	-	-	3979.749	Gd	4 h	-	-
3984.747	Zr I, II	20	2	-	3982.170	Kr I	-	[6]	IHu	3979.735	Eu	3	2	-
3984.722	Ca	2	2	-	3982.169	Mn	12	25	-	3979.71	A I	-	[10]	Ms
3984.712	U	1	5	-	3982.169	Ce	6	-	-	3979.687	Pr	5 d	2 d	-
3984.70	Dy	8	-	Kn	3982.161	Zr I	9	-	-	3979.641	Fe	6	-	-
3984.682	Ru	4	2	-	3982.117	U	6	6	-	3979.628	Eu	10	2	-
3984.675	Ce	40	8	-	3982.105	Th	8	8	-	3979.59	Au II	5	12	-
3984.614	Th	10 h	8	-	3982.063	Pr	125	100	-	3979.52	Cr	-	5	-
3984.600	V I	40	15	-	3982.056	Cb	6	5	-	3979.519	Co I	150 w	12	-
3984.447	Sm II	4	4	-	3982.052	Mo	8	8	-	3979.516	U	2 h	2	-
3984.40	Rh I	25	10	-	3982.03	Ho	-	6	Ex	3979.481	Dy	30	-	-
3984.374	Th	8	5	-	3982.03	Sb II	-	3	-	3979.479	Nd	40	30	-
3984.338	Cr I	80	60	-	3982.010	Ti II	1	3	-	3979.424	V I	40	10	-
3984.335	V I	35	15	-	3981.990	Zr II	3	2	-	3979.424	Ru I	60	60	-
3984.333	Ti I	20	3	-	3981.947	Ta	30	15	-	3979.40	Hf II	6	40	Me

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3979.372	Cb	5	5	—	—	3976.56	Pr	15	8	—	—	3973.942	U	15	4	—	—
3979.36	A	—	[25]	—	Rt	3976.514	W	—	—	3 h	—	3973.928	Mo	5	3	—	—
3979.336	Gd I	100	30	—	—	3976.510	Cb	—	—	80 h	—	3973.912	Nd	8	—	—	—
3979.324	Cr	10	2	—	—	3976.426	Sm II	25	10	—	—	3973.9	bh Ca	8	—	—	L
3979.317	Pr	10	3	—	—	3976.418	Th	15	20	—	—	3973.900	Pr	10	3	—	—
3979.286	W	12	12	—	—	3976.390	Fe	3	1	—	—	3973.879	Dy	10	—	—	Kn
3979.284	Ta	50 h	3 h	—	—	3976.311	Ir I	10	70	—	—	3973.870	Cb	2 d	1 h	—	—
3979.221	Mo	6	12	—	—	3976.310	Cr	12	2	—	—	3973.84	C II	—	2 h	—	En
3979.195	Sm II	50	50	—	—	3976.297	Pr	30	15	—	—	3973.837	Eu	6 W	—	—	—
3979.142	V I	50	8	—	—	3976.29	Sc	4	—	—	m	3973.771	Mo	25	25	—	—
3979.13	Er	7 d	2	—	—	3976.287	Pr	50	10	—	—	3973.75	I I	—	[5]	—	Bl
3979.121	U	1	3	—	—	3976.284	W	3	5	—	—	3973.707	Ca I	200	15	—	IWg
3979.08	La II	—	2	—	Me	3976.266	Sm II	40	15	—	—	3973.654	Fe	40	10	—	—
3979.056	Th	10	10	—	—	3976.259	Ce	3 s	2	—	—	3973.650	Nd	30	20	—	—
3979.033	Nd	20	8	—	—	3976.176	Zr I	5	—	—	—	3973.639	V II	25	40	—	—
3979.018	Eu	4	—	—	—	3976.112	Nd	6 d	4 d	—	—	3973.638	Th	5 h	—	—	—
3978.97	Rn I	—	[12]	—	Rs	3976.110	Rh I	2	2	—	—	3973.624	Cb	5	10	—	—
3978.912	Pd I	3 h	—	—	—	3976.049	Ce	4	—	—	—	3973.59	Ho	1	4	—	Ex
3978.895	Ce	50	50	—	—	3976.002	Tb	3 W	—	—	—	3973.577	Er	18	2	—	—
3978.864	Co I	20	3	—	—	3975.956	Mo	10	8	—	—	3973.562	Ni I	800	10	—	—
3978.796	U	8	18	—	—	3975.943	Eu	8 wh	—	—	—	3973.561	Co I	15	5	—	—
3978.753	Cb	5	5	—	—	3975.90	Te	—	[10]	—	Bl	3973.505	Zr I	25	—	—	—
3978.735	Zr I	20	—	—	—	3975.892	W	8	9	—	—	3973.464	Yt	5	4	—	—
3978.677	Cr I	80	40	—	—	3975.888	Mn	40	50	—	—	3973.391	Zr I	10	—	—	—
3978.655	Co I	100	—	—	—	3975.88	Ho	3	2	—	Ex	3973.38	Eu	3	—	—	—
3978.650	Ce	35	6	—	—	3975.842	Fe	8	1	—	—	3973.358	V I	30	3	—	—
3978.646	Pr	20	4	—	—	3975.837	Nd	20	10	—	—	3973.284	W	4	4 h	—	—
3978.63	Re	8 h	—	—	m	3975.686	Pr	20	4	—	—	3973.269	Nd	40	25	—	—
3978.59	Yt	4	2 h	—	m	3975.654	Re I	20	—	—	—	3973.266	O II	—	[125]	—	Fl
3978.573	Dy	200	15	—	—	3975.59	Xe II	—	[3]	—	Hu	3973.264	Fe	2	—	—	—
3978.565	Er	18 s	3	—	—	3975.562	Eu	8	—	—	—	3973.263	Er	3	1 wh	—	—
3978.55	Ho	6	6	—	Ex	3975.53	Tm	2	10	—	Me	3973.234	U	6	8	—	—
3978.464	Fe I	6	1	—	—	3975.464	W	10	12	—	—	3973.230	Th	8	3	—	—
3978.448	Nd	—	2	—	—	3975.441	Os	50	12	—	—	3973.178	Ta	1	400 W	—	—
3978.446	Eu	30 W	—	—	—	3975.4	bh Sr	8	—	—	L	3973.149	Co I	150 w	6	—	—
3978.445	Ru I	60	70	—	—	3975.384	Re	2	—	—	—	3973.124	Pr	4	3	—	—
3978.405	U	6	—	—	—	3975.362	Ba I	10 r	—	—	Sz	3973.107	Sm II	5	—	—	—
3978.336	Ce	3	—	—	—	3975.352	V I	35	6	—	—	3973.10	P	—	[15]	—	Gu
3978.284	Nd	10	6	—	—	3975.322	Co I	30	5	—	m	3973.038	Er	25	—	—	—
3978.274	U	4	4	—	—	3975.314	Rh I	20	10	—	—	3973.034	Ce	8	—	—	—
3978.253	Zr	9	—	—	—	3975.303	Yb	8	—	—	—	3972.948	Mo	4	20	—	—
3978.240	Sm	6	—	—	—	3975.296	Er	2	—	—	—	3972.911	Th	4	—	—	—
3978.207	Rb II	—	[40]	—	Rr	3975.294	Zr I	50	1	—	—	3972.823	I II	—	[15]	—	Ke
3978.159	U	4	—	—	—	3975.253	U	3	2	—	—	3972.808	W	4	3	—	—
3978.107	Ir I	10	2	—	—	3975.228	Th	8	8	—	—	3972.710	Gd I	20	10	—	—
3978.000	Cs	—	[10]	—	Sv	3975.220	Sm II	10	5	—	—	3972.69	Rn I	—	[5]	—	Rs
3977.994	Nd	15	8	—	—	3975.210	Fe I	4	—	—	—	3972.688	Cr I	60	12	—	—
3977.941	Cb	10	15	—	—	3975.203	Nd	40	30	—	—	3972.670	F II	—	[10]	—	Di
3977.902	Mo	10	10	—	—	3975.200	Eu	6 W	—	—	—	3972.648	Th	5	3	—	—
3977.86	Br	—	[3]	—	Bl	3975.15	Hf II	3	3	—	Me	3972.60	Ho	2	2 h	—	Kn
3977.847	Th	1	2	—	—	3975.121	Gd	8	15	—	—	3972.58	Xe II	—	[25 whl]	—	Hu
3977.82	Ca	—	2	—	Ad	3975.066	Ce	20	3	—	—	3972.570	Ca I	12	—	—	IWg
3977.771	Ce	15	—	—	—	3975.04	Dy	3	1	—	Ed	3972.559	W	—	6	—	—
3977.744	Fe I	300	150	—	—	3974.976	U	5	2	—	—	3972.551	K II	—	[30]	—	Dm
3977.741	V II	—	10	—	—	3974.975	U	4	8	—	—	3972.527	Co I	100	6	—	m
3977.738	Tb	2	—	—	—	3974.859	Mo	—	20	—	—	3972.523	Cb	20	15	—	—
3977.628	Eu	5	—	—	—	3974.858	Pr	15	10	—	—	3972.414	Dy	7	—	—	Kn
3977.533	Ce	6	—	—	—	3974.816	Ce	3	—	—	—	3972.411	F II	—	[2]	—	Di
3977.479	Zr I	20	—	—	—	3974.814	Gd I	10	10	—	—	3972.393	Nd	20	8	—	—
3977.417	Pr	12	6	—	—	3974.791	F II	—	[20]	—	Di	3972.340	U	4	10	—	—
3977.351	U	6	1	—	—	3974.764	Fe I	8	—	—	—	3972.305	Zr I	10	—	—	—
3977.335	Zr I	10	—	—	—	3974.76	A	—	[15]	—	Rt	3972.218	U	10	4	—	—
3977.325	Nd	12 d	6 d	—	—	3974.734	Co I	100	10	—	—	3972.181	Gd	4	4	—	—
3977.231	Os I	300	40	—	—	3974.723	Er	15	3	—	—	3972.171	Ni I	100	6	—	—
3977.183	Co I	20	—	—	—	3974.70	Ho	6	4	—	Ex	3972.164	Pr	125	80	—	—
3977.093	Ce	4	—	—	—	3974.666	Tb	4	—	—	—	3972.159	Th	15	8	—	—
3977.080	Mn	50	100	—	—	3974.663	Nd	20	2	—	—	3972.130	Ti I	3	—	—	—
3977.064	U	6	8	—	—	3974.660	Sm	15	4	—	—	3972.071	Ce II	25	4	—	—
3977.05	Ho	5	4	—	Ex	3974.650	Ni I	40 h	—	—	—	3972.051	Tb	12	8	—	—
3977.024	Er	10	—	—	—	3974.501	Ru I	20	8	—	—	3972.047	Eu	5	5	—	—
3976.869	Ir I	6	2	—	—	3974.489	Ce	8	—	—	—	3972.047	F II	—	[6]	—	Di
3976.864	Gd	5	—	—	—	3974.484	Nd	20	20	—	—	3972.004	U	3	3	—	—
3976.864	Fe I	30	10	—	—	3974.48	A	—	[10]	—	Rt	3972.000	W	6	5	—	—
3976.862	Sm	5	2	—	—	3974.417	Xe I	—	[40]	—	IMe	3971.99	Eu I	1000 Rwh	—	—	—
3976.86	Ho	6	4	—	Ex	3974.398	Fe I	10	1	—	—	3971.951	V I	5	2	—	—
3976.859	Eu	12	—	—	—	3974.37	Pr	30	8	—	—	3971.925	Cb	15	5	—	—
3976.836	Nd	40	30	—	—	3974.336	Ce	21	—	—	—	3971.90	Eu	100 Rwh	—	—	—
3976.826	Pr	12	5	—	—	3974.272	Tb	15	8	—	—	3971.876	Ce II	6	—	—	—
3976.821	Tb	150	200	—	—	3974.243	Gd	5	—	—	—	3971.862	U	6	6	—	—
3976.778	Ce	4	—	—	—	3974.239	Cs	—	[6]	—	Sv	3971.852	Cb	5	5	—	—
3976.743	Er	3 wd	—	—	—	3974.232	Th	5	5	—	—	3971.811	Fe I	2	—	—	—
3976.674	Cb	10	10	—	—	3974.201	Zr	4	—	—	—	3971.770	Tb	10	—	—	—
3976.665	Cr I	300	300	—	—	3974.192	Ce II	6	—	—	—	3971.762	Gd	25	20	—	—
3976.614	Fe	8	35	—	—	3974.066	Gd	100	80	—	—	3971.695	Ch	—	15 h	—	—
3976.562	Fe	2	1	—	—	3974.004	Ce	5	5	—	—	3971.693	Pr	60	40	—	—

3971.6—3963.1 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3971.684	Ce II	35	6	—	—	3968.475	Ir	25	—	—	—	3965.850	U	2	2	—	—
3971.67	Rn	—	[80]	—	Wa	3968.471	Cb	3	10	—	—	3965.832	Pr	10	4	—	—
3971.669	Nd	10	4	—	—	3968.469	Ce	35	35 w	—	—	3965.757	Mo	10	10	—	—
3971.626	F II	—	[3]	—	Di	3968.468	Ca II	500 R	500 R	—	I	3965.756	I	—	[7]	—	Ke
3971.596	U	4	—	—	—	3968.464	Lu	50	—	—	Kn	3965.690	Cb	10	15	—	—
3971.397	U	—	4	—	—	3968.461	Ru	12	200	—	—	3965.619	Pr	10	5	—	—
3971.394	Sm II	50	30	—	—	3968.43	Yt	10	30	—	—	3965.526	I II	—	[15]	—	Ke
3971.374	Mo	2	3	—	—	3968.395	Dy	300	—	—	—	3965.513	Fe I	10	3	—	—
3971.329	Fe I	200	125	—	—	3968.374	U	1	2	—	—	3965.487	W	4	5 h	—	—
3971.3	Pb II	—	[30]	—	Ea	3968.370	Fe	2	—	—	—	3965.449	Eu	3	2	—	—
3971.255	Cr I	80	50	—	—	3968.36	A	—	[200]	—	Rt	3965.432	Zn I	15	—	—	IHz
3971.214	Dy	12	—	—	Kn	3968.35	Gd	20	—	—	—	3965.293	U	3	1	—	—
3971.18	Cl II	—	[7]	—	Ks	3968.257	Zr I	100	4	—	—	3965.263	Pr	100	50	—	—
3971.164	Pr	100	60	—	—	3968.22	Ag	100	60	—	Ct	3965.235	Co I	8	—	—	—
3971.088	Eu	4	—	—	—	3968.171	W	8	8	—	—	3965.212	Ce	2	—	—	—
3971.077	Gd	20	20	—	—	3968.164	Rh I	2	—	—	—	3965.187	Cs II	—	[25]	—	Sv
3971.031	U	—	2	—	—	3968.16	Ta	4 h	—	—	Ks	3965.145	W	12	12	—	—
3971.014	Ce	3	—	—	—	3968.158	Pr	25	10	—	—	3965.098	Tb	6	—	—	—
3970.959	Mo	5	5	—	—	3968.146	Tb	2	—	—	—	3965.077	Ce	2	—	—	—
3970.828	Tb	4	—	—	—	3968.094	V II	25	40	—	—	3965.04	Gd	5 h	—	—	—
3970.800	W	12	12	—	—	3968.03	Hg	—	[50]	—	Ps	3965.01	Eu	15 w	—	—	Kn
3970.788	Ce	3	—	—	—	3968.03	Yb	—	3	—	Mo	3964.994	W	9	6	—	—
3970.69	S II	—	[5]	—	Hn	3968.01	Hf	5	1	—	m	3964.965	Os	60	12	—	—
3970.652	Cb	3	10 s	—	—	3968.007	U	6 h	15	—	—	3964.963	U	8	8	—	—
3970.636	Ce II	15	3	—	—	3967.969	Fe I	60	15	—	—	3964.95	Hf II	8	15	—	m
3970.612	Eu	4	—	—	—	3967.915	Ce	3	—	—	—	3964.92	Ce	2	1 h	—	—
3970.60	Br	—	[10]	—	Bl	3967.779	Sm	6	2	—	—	3964.9	Rn	—	[5]	—	Wa
3970.588	U	10	2	—	—	3967.705	Nd	20	6	—	—	3964.899	Nd	20	6	—	—
3970.527	Sm II	15	10	—	—	3967.69	Yt II	3	10 h	—	—	3964.896	Ru	50	40	—	—
3970.517	Ir I	5	—	—	—	3967.675	Sm II	8	6	—	—	3964.89	Eu	40 wd	—	—	—
3970.503	Ni I	40 w	—	—	—	3967.661	Pr	10	3	—	—	3964.89	Kr II	—	[30 hl]	—	Me
3970.45	Zr	10	—	—	Ks	3967.649	Tb	6	—	—	—	3964.884	Sm	3	—	—	—
3970.424	Ce	6	1	—	—	3967.644	Ce	3	—	—	—	3964.880	Th	5	3	—	—
3970.394	Fe	50	30	—	—	3967.639	U	—	2	—	—	3964.825	Pr	125 d	80 d	—	—
3970.385	Ru	3	—	—	—	3967.541	Xe I	—	[200]	—	IMe	3964.811	Re	20	—	—	—
3970.263	Fe	5	2	—	—	3967.54	P	—	[15]	—	Gu	3964.747	Sb II	2 h	15	—	Sp
3970.198	Gd	4 h	—	—	—	3967.53	Ce	5	1	—	—	3 rd 727	He I	—	[50]	—	IMr
3970.178	Tb	30	3	—	—	3967.517	Dy	8	—	—	Kn	3964.70	Dy	—	—	—	Kn
3970.143	U	1	5	—	—	3967.507	Ir I	3	—	—	Ab	3964.666	U	10	10	—	—
3970.098	Ta	100	40	—	—	3967.48	U	10	—	—	—	3964.57	I I	—	[5]	—	Db
3970.074	H I	—	[80]	—	m	3967.423	Fe	125	100	—	S	3964.542	Rh	—	3	—	—
3970.070	Pr	15	4	—	—	3967.424	Re	25	—	—	—	3964.520	Fe I	80	25	—	—
3970.06	Pt II	4	15	—	m	3967.413	Th	2	1	—	—	3964.507	Er	12	—	—	—
3970.051	Hf	10	3	—	—	3967.374	Cb	—	50 h	—	—	3964.503	Ce II	25	6	—	—
3970.043	Sr I	20	—	—	ISn	3967.313	Nd	10	2	—	—	3964.50	V I	2	—	—	Me
3970.041	Ce	12	3	—	—	3967.30	Cs	—	[4]	—	Bs	3964.49	Eu	20 W	—	—	—
3969.95	N	—	[2]	—	Du	3967.214	Th	8	—	—	—	3964.356	Sm	8	1	—	—
3969.920	Tb	3	—	—	—	3967.211	Tb	20	—	—	—	3964.305	Tb	2	—	—	—
3969.90	Eu	8 W	—	—	—	3967.178	Ce II	6	2	—	—	3964.304	Nd	15	6	—	—
3969.834	Th	5	5	—	—	3967.131	Pr	40 d	25 d	—	—	3964.279	Cb	1	50	—	—
3969.794	Ru I	8	4	—	—	3967.13	Eu	25 W	—	—	m	3964.272	Ti I	80	40	—	—
3969.755	Pr	12	3	—	—	3967.068	Nd	30	10	—	—	3964.261	Pr	60	50	—	—
3969.748	Cr I	200	90	—	—	3967.048	Ce II	35	6	—	—	3964.226	U	5	4	—	—
3969.671	Os	100	100	—	—	3967.013	U	2	2	—	—	3964.178	Ce	15	5	—	—
3969.666	Nd	20	4	—	—	3966.971	Th	5	5	—	—	3964.133	W	—	10	—	—
3969.633	Fe	5	5	—	—	3966.854	Gd	8	—	—	—	3964.112	U	6	8	—	—
3969.534	Th	5	5	—	—	3966.755	W	5	3	—	—	3964.074	Sm II	10	2	—	—
3969.510	Pr	8	3	—	—	3966.72	Th	3	1	—	—	3963.986	Mo	10	10	—	—
3969.434	Er	6	1	—	—	3966.687	K II	—	[30]	—	Dm	3963.96	Sb II	2 h	3	—	—
3969.422	U	5	—	—	—	3966.662	Zr I	—	3	—	—	3963.912	Nd	30	20	—	—
3969.343	Th	3 w	2 w	—	—	3966.629	Fe I	80	40	—	—	3963.801	Zr I	10	—	—	—
3969.261	Sr I	30	—	—	ISn	3966.615	Eu	5 W	—	—	—	3963.80	Dy	10	—	—	Kn
3969.261	Fe I	600	400	—	—	3966.580	Ir	3	—	—	Ab	3963.781	Ce	3	—	—	—
3969.261	Gd	200	—	—	—	3966.573	Pr	100 d	70 d	—	—	3963.713	Pr	30	15	—	—
3969.233	Dy	6	—	—	Kn	3966.567	U	20	30	—	—	3963.700	Re I	10	—	—	—
3969.23	Eu	20 W	—	—	—	3966.54	Pt	3	2	—	Ex	3963.696	W	5	4	—	—
3969.199	W	12	10	—	—	3966.518	Fe I	4 h	1	—	—	3963.690	Cr I	300	300	—	—
3969.18	Te	—	[10]	—	Bl	3966.499	Tb	3	—	—	—	3963.658	Gd	50	60	—	—
3969.172	Ir	30	10	—	—	3966.398	U	1	4	—	—	3963.628	Os I	500	50	—	—
3969.156	Ce	2	—	—	—	3966.362	Dy	5	—	—	Kn	3963.626	V	20	10	—	—
3969.135	Cb	—	20 h	—	—	3966.361	Pt I	80	40	—	—	3963.62	Eu	8 W	—	—	m
3969.13	In	—	15	—	Sq	3966.355	Er	3	—	—	—	3963.582	Cb	—	5 h	—	—
3969.117	Co I	100 w	6	—	—	3966.332	Sm II	5	4	—	—	3963.526	Mo	6	6	—	—
3969.061	Cr I	80	50	—	—	3966.279	Gd	25	12	—	—	3963.468	Th	10	10	—	—
3969.022	U	5	8	—	—	3966.264	Zr	7	—	—	—	3963.401	Tb	2	—	—	—
3969.015	Mo	3	3	—	—	3966.250	Cb	10	30	—	—	3963.374	Ce	6	2	—	—
3969.005	Gd I	40	—	—	—	3966.250	Tb	3	—	—	—	3963.362	Er	8	—	—	—
3969.003	Th	10	5	—	—	3966.149	Mo	5 d	6	—	—	3963.354	Ti I	2	—	—	—
3968.876	Nd	20	4	—	—	3966.092	Cb	15	10	—	—	3963.27	Ho	5	4	—	Ex
3968.870	Eu	3 wh	—	—	—	3966.088	Ir I	30	4	—	—	3963.270	Re I	25	—	—	—
3968.748	Mo	8	50	—	—	3966.066	Fe I	100	70	—	S	3963.226	Th	10	10	—	—
3968.73	Tb	2	—	—	Ed	3966.051	Sm II	60	50	—	—	3963.16	Dy	3	—	—	m
3968.723	Zr	3	—	—	—	3965.967	U	1	4	—	—	3963.13	S II	—	[10]	—	Hn
3968.66	Br	—	[8]	—	Bl	3965.943	Tb	12	3	—	—	3963.114	Nd	30	25	—	—
3968.590	W	6	6	—	—	3965.930	Ce	3	—	—	—	3963.109	Fe I	125	50	—	—

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities					
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
3963.04	La	—	5 l	—	Me	3960.506	Os	50	15	—	—	3957.651	Mo	2	3	—	
3963.037	U	—	2	—	—	3960.47	Br	—	[6]	—	Bl	3957.629	Co I	10	2	—	Dn
3962.996	Sm	50	40	—	—	3960.46	Ca	3	2 h	—	—	3957.623	W	—	5	—	
3962.941	Tb	4	—	—	—	3960.387	U	6	8	—	—	3957.62	P	—	[100]	3	Gu
3962.899	Ce	3	—	—	—	3960.376	Ce	10	2	—	—	3957.475	Sm	15	3	—	
3962.852	Ti I	80	35	—	—	3960.339	Th	10	15	—	—	3957.465	Nd	60	40 s	—	
3962.788	U	15	8	—	—	3960.296	Tb	2	—	—	—	3957.46	In	—	15	—	Sq
3962.783	Ir I	20	—	—	—	3960.285	Fe	30	6	—	—	3957.45	Er	5	—	—	
3962.75	Sn	—	5	—	Ar	3960.24	Hg	—	[30]	—	Ps	3957.449	Ru I	8	5	—	
3962.722	Fe	2 h	—	—	—	3960.199	Zr	2	1	—	—	3957.40	Cd II	—	8	—	Tk
3962.61	Sr	10 h	—	—	m	3960.171	U	6	5	—	—	3957.400	Zr	3	—	—	
3962.609	Tb	5	—	—	—	3960.137	Mo	—	5	—	—	3957.366	Re	12	—	—	
3962.609	In II	—	[25]	—	Ps	3960.121	Sm	5	3	—	—	3957.365	Tb	9	—	—	
3962.601	Dy	8	—	—	Kn	3960.115	Gd	20	20	—	—	3957.25	La	—	2 h	—	Me
3962.588	In II	—	[25]	—	Ps	3960.095	Tb	3	3	—	—	3957.221	Ru	8	2	—	
3962.476	Re I	100	—	—	—	3959.953	Mo	3	2	—	—	3957.21	Dy	3	1	—	m
3962.470	U	1	4	—	—	3959.908	Er	3	1	—	—	3957.209	Ce	5 s	—	—	
3962.445	Pr	60	50	—	—	3959.906	Ta	5	—	—	—	3957.20	N	—	[10]	—	Du
3962.443	Ir	6	—	—	—	3959.84	Ho	—	4	—	Ex	3957.15	Rn	—	[25]	—	Rc
3962.418	In II	—	[5]	—	Ps	3959.799	Ce	18	3	—	—	3957.146	Ce	3	—	—	
3962.353	Fe I	7	1	—	—	3959.780	Pr	25	5	—	—	3957.12	W	—	5 d	—	
3962.346	Th	8	8	—	—	3959.777	K II	—	[10]	—	Dm	3957.10	I I	—	[10]	—	Bl
3962.34	Kr II	—	[10 hl]	—	Me	3959.726	Ta	3	3	—	—	3957.053	Ca I	80	3	—	IWg
3962.332	W	9	9	—	—	3959.69	Dy	3	1	—	m	3957.040	Eu	12	—	—	
3962.28	Ca	3 w	2	—	Ad	3959.68	Ho	6	—	—	Kn	3957.030	Fe	50	15	—	
3962.275	In II	—	[25]	—	Ps	3959.673	Mo	2	3	—	—	3956.898	Ce II	8	3	—	
3962.271	U	4	2	—	—	3959.647	U	3	2	—	—	3956.85	Xe I	—	[6]	—	Me
3962.244	Sm II	10	5	—	—	3959.616	Ce	10	2	—	—	3956.818	Nd	10	4	—	
3962.216	Nd	3h	20	—	—	3959.530	Sm	50	40	—	—	3956.81	Dy	3	1	—	m
3962.187	Cr	8	1	—	—	3959.524	Gd	25	5	—	—	3956.787	Zr	2	—	—	
3962.186	Pr	9	3	—	—	3959.517	Pr	25	10	—	—	3956.772	Ce	2	—	—	
3962.167	Zr	2	—	—	—	3959.51	Ho	—	4	—	Ex	3956.762	Pr	20	12	—	
3962.163	Cb	—	10 h	—	—	3959.495	Cs II	—	[20]	—	Sv	3956.682	Ir I	7	—	—	
3962.160	U	5	—	—	—	3959.435	Gd	25	—	—	—	3956.682	Th	10	10	—	
3962.159	In II	—	[18]	—	Ps	3959.412	Pr	25 d	10 d	—	—	3956.681	Fe I	150	150	—	S
3962.153	Cb	3	—	—	—	3959.4	bh Ca	4	—	—	L	3956.68	Eu	4 W	—	—	
3962.136	Sm	5	3	—	—	3959.359	Cb	10	10	—	—	3956.624	Cb	2	5	—	
3962.12	Ni I	10 h	—	—	—	3959.35	Dy	9	—	—	Kn	3956.603	Th	10	10	—	
3962.105	Gd	25	25	—	—	3959.295	Th	2	1	—	—	3956.570	Ta	15	2	—	
3962.086	Ce	15	4	—	—	3959.25	Eu	3 W	—	—	—	3956.460	Fe	100	100	—	
3962.041	In II	—	[25]	—	Ps	3959.205	U	5	1	—	—	3956.432	Er	10	—	—	
3962.03	La	2	3	—	Me	3959.113	Au	8	20	—	—	3956.40	Cb	2 w	1	—	Me
3961.99	Eu	10 W	—	—	Kn	3959.088	Nd	10	4	—	—	3956.382	U	—	2	—	
3961.988	Mo	3	—	—	—	3958.88	Eu	3 W	—	—	—	3956.362	Nd	20	2	—	
3961.984	U	6	2	—	—	3958.880	W	10	10	—	—	3956.343	Ti I	100	50	—	
3961.970	Tb	3	—	—	—	3958.868	Ce	20	6	—	—	3956.284	Ce	30	8	—	
3961.808	Sm	25	10	—	—	3958.865	Rh I	200	100	—	—	3956.280	Co I	15	2	—	
3961.760	W	5	5	—	—	3958.860	Mo	3	3	—	—	3956.256	Zr	2	—	—	
3961.661	Ce	6	2	—	—	3958.740	Fe	2 h	—	—	—	3956.24	Dy	4	—	—	m
3961.660	U	1	3	—	—	3958.709	Sm II	10	5	—	—	3956.170	Tb	10	—	—	
3961.62	Cl II	—	[12]	—	Ks	3958.682	Gd	15	—	—	—	3956.115	Ir I	6	—	—	
3961.62	Cb	—	10 h	—	Me	3958.648	Th	5	—	—	—	3956.099	K II	—	[10]	—	Dm
3961.587	Zr	500	8	—	—	3958.642	Pd I	500 w	200	—	—	3956.07	La II	—	4	—	
3961.55	S I	—	[10]	—	Hn	3958.604	Mo	8	8	—	—	3956.063	Ce	5	2	—	
3961.544	Yb	30	—	—	—	3958.54	La II	2	2 h	—	—	3955.966	Nd	20	10	—	j
3961.527	Al I	3000	2000	—	Ks	3958.500	U	8	—	—	—	3955.960	Fe	10	5	—	
3961.518	Ru	6	4	—	—	3958.495	Pr	25	10	—	—	3955.958	Th	8	—	—	
3961.515	U	5	1	—	—	3958.400	Fe	2	—	—	—	3955.94	Ti II	—	[3]	—	Sv
3961.503	Mo	5	500	—	—	3958.39	A	—	[10]	—	Rt	3955.923	Cs	—	[10]	—	Sx
3961.386	Ce	2	—	—	—	3958.363	Re	10	—	—	—	3955.917	Co	20	3	—	j
3961.3	Ag	15	5	—	Ct	3958.359	Tb	100 w	15	—	—	3955.881	Cb	2	20	—	
3961.284	Pr	10	5	—	—	3958.315	Pd	—	2 h	—	Dn	3955.851	N II	—	[35]	—	Fl
3961.210	Er	6	—	—	—	3958.266	Ce II	20	3	—	—	3955.809	Zr	2	—	—	
3961.178	W	—	9	—	—	3958.240	Rh	5	4	—	—	3955.805	Tb	2	—	—	
3961.145	Fe I	25	7	—	—	3958.218	Zr II	500	150	—	—	3955.754	Eu	50 W	—	—	
3961.14	Eu	50 W	—	—	—	3958.213	Ti I	150	100	—	—	3955.74	Ho	15	4	—	Ex
3961.064	U	6	—	—	—	3958.185	Pr	7	3	—	—	3955.717	U	3 h	6	—	
3961.033	Re I	30	—	—	—	3958.139	U	2 h	3 h	—	—	3955.681	Cb	5	3	—	
3961.016	Os	125	20	—	—	3958.135	Cb	3	20	—	—	3955.633	Zr I	4	—	—	
3960.995	Co I	60	10	—	—	3958.100	Tm	200	40	—	Me	3955.630	Tb	3	—	—	
3960.984	Cb	8	5	—	—	3958.07	Cr	5	2	—	—	3955.615	W	—	5	—	
3960.947	Th	2	1	—	—	3958.008	U	8 h	6	—	—	3955.57	I	—	[2]	—	Ke
3960.914	Ce II	40	8	—	—	3958.004	Dy	2	—	—	Kn	3955.562	Nd	10	4	—	
3960.895	Fe	3	3 h	—	Do	3958.001	Nd	30	20	—	—	3955.493	Mo	10	15	—	
3960.871	W	—	10	—	—	3957.975	Tb	60 d	15	—	—	3955.45	Ti II	—	[10]	—	Sx
3960.804	U	5	8	—	—	3957.971	Mo	3	3	—	—	3955.421	Pr	7	2	—	
3960.763	Cr	40	8	—	—	3957.969	Ce	10	2	—	—	3955.378	U	8	15	—	
3960.733	Eu	3	—	—	—	3957.935	Co I	100 R	—	—	Dn	3955.367	Os	12	10	—	
3960.695	Tb	5	—	—	—	3957.915	Eu	10	—	—	—	3955.363	Ce	5	5	—	
3960.599	Pr	50	25 h	—	—	3957.90	V	—	2	—	Me	3955.354	Fe I	25	5	—	
3960.584	Re	15	—	—	—	3957.860	Ce	2	—	—	—	3955.35	Br	—	[8]	—	Bl
3960.555	Ir I	4	—	—	—	3957.812	U	10	15	—	—	3955.310	W	12	10	—	
3960.55	Sb II	—	18 h	—	—	3957.802	Dy	70	—	—	—	3955.207	K II	—	[30]	—	Dm
3960.523	U	6	10	—	—	3957.682	Pr	20	8	—	—	3955.19	La	3	2 h	—	
3960.511	Sm	5	3	—	—	3957.681	Gd	300 W	200	—	—	3955.179	Th	8	1	—	

3955.1 — 3947.3 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3955.12	Dy	4	—	—	Ed	3952.370	Cb	3	50	—	—	3949.957	Fe I	150	100	—	—
3955.095	Yt	2	2	—	—	3952.36	Rn I	—	—	[25]	Rs	3949.935	Cb	4	3	—	—
3955.093	Nd	20	6	—	—	3952.357	Pr	8	3	—	—	3949.92	Ca	—	2 r	—	Ht
3955.073	Tb	3	—	—	—	3952.326	Co I	40	4	—	—	3949.904	I	—	[20]	—	Ke
3955.05	Ho	4	—	—	Kn	3952.290	Ru	4	1	—	—	3949.868	Tb	6	—	—	—
3954.995	Pr	9	2	—	—	3952.278	Sc	3	—	—	—	3949.845	Sm	2	2	—	—
3954.972	Sm	5	3	—	—	3952.273	Mo	4	2	—	—	3949.837	Eu	5	—	—	—
3954.965	Re	2	—	—	—	3952.263	U	3	6	—	—	3949.816	Ce	10	—	—	—
3954.890	Ru	5	—	—	—	3952.262	W	5	4	—	—	3949.784	Os	50	10	—	—
3954.792	Tb	3	—	—	—	3952.26	F II	—	[3]	—	Di	3949.617	Cr	6	—	—	—
3954.78	Kr II	—	—	[90 whl]	Me	3952.25	Eu	3 W	—	—	—	3949.586	Eu	50 W	—	—	—
3954.73	Xe II	—	—	[15 hl]	Hu	3952.21	N	—	[10]	—	Du	3949.585	Cr I	5	1	—	—
3954.715	Fe	2	—	—	—	3952.195	Nd	30	20	—	—	3949.57	Ca	—	2	—	Ad
3954.69	Nd	20	4	—	—	3952.159	Ta	8	3	—	—	3949.516	U	2	8	—	—
3954.663	U	20	30	—	—	3952.106	Ce	10	1	—	—	3949.51	Ba II	—	[20]	—	Rs
3954.64	Ca	—	2	—	Ad	3952.08	C II	—	6	—	—	3949.509	Tb	10	3	—	—
3954.596	O I	—	[40]	—	Fh	3952.046	Tb	2	—	—	—	3949.457	Nd	2	—	—	—
3954.565	Dy	40	—	—	—	3952.020	Pr	5	4	—	—	3949.455	Cb	1	50	—	—
3954.512	Tb	8	—	—	—	3952.009	Gd	100	60	—	—	3949.44	Ag	3	8	—	—
3954.477	U	2	2	—	—	3951.987	O I	—	[10]	—	Fh	3949.438	Pr	150	100	—	—
3954.451	Ce	2	8 wh	—	—	3951.968	V II	35	50	—	—	3949.417	Ru I	10	5	—	—
3954.433	Re	20	—	—	—	3951.962	Mn	40	50	—	—	3949.39	Tb	4	—	—	Ed
3954.406	Nd	20	12	—	—	3951.952	Ir I	20	8	—	—	3949.385	Ce II	20	3	—	—
3954.38	O I, II	—	[100]	—	m	3951.94	Pb I	—	50 h	—	Sx	3949.328	Cb	3	2 h	—	—
3954.294	Ta	5 wh	—	—	—	3951.89	Nd	8	—	—	—	3949.309	U	2	6	—	—
3954.255	Eu	6 wd	—	—	—	3951.885	Sm	10	3	—	—	3949.27	Tm	50	5	—	Me
3954.234	U	6	8	—	—	3951.876	W	7	8	—	—	3949.213	W	—	3	—	—
3954.21	Cl II	—	[20]	—	Ks	3951.875	Tb	6	—	—	—	3949.208	Gd	10	20	—	—
3954.209	Nd	12	4	—	—	3951.855	U	1	4	—	—	3949.15	Fe	4	1	—	—
3954.195	Sm II	15	5	—	—	3951.843	Pr	12	5	—	—	3949.123	Eu	25 w	1	—	—
3954.136	Tb	3	—	—	—	3951.84	Se	—	[25]	—	Bt	3949.116	Ce	6	—	—	—
3954.11	Eu	2 W	—	—	—	3951.826	Hf	15	4	—	—	3949.106	La II	1000	800	—	—
3954.050	Tb	5	3	—	—	3951.765	Cr I	40	5	—	—	3948.991	U	8	—	—	—
3953.951	Ce II	18	2	—	—	3951.725	Co I	4 h	2	—	—	3948.979	A I	—	[2000]	—	I
3953.928	Mo	15	20	—	—	3951.705	Tb	4	—	—	—	3948.971	Th	30	30	—	—
3953.861	Fe	8	2	—	—	3951.624	Ce	8	1	—	—	3948.949	Ce	4	—	—	—
3953.835	Ru	5	—	—	—	3951.61	Xe II	—	[3 whl]	—	Hu	3948.901	Ca I	40	15	—	IWg
3953.776	Ce	2	—	—	—	3951.596	Yt II	6	8	—	—	3948.853	Cr	25	2	—	—
3953.713	W	4	3	—	—	3951.553	U	1	8	—	—	3948.80	Se II	—	[25]	—	Bt
3953.680	La I	30	—	—	—	3951.533	Mo	4	4	—	—	3948.779	Fe	150	100	—	S
3953.660	Ce II	12	4	—	—	3951.521	Th	20	20	—	—	3948.779	Eu	4	—	—	—
3953.644	Pt I	2	1	—	—	3951.50	P	—	[70]	—	Gu	3948.778	Nd	—	8	—	—
3953.59	Kr II	—	[20]	—	Me	3951.49	Er	2	1	—	m	3948.74	As II	—	50	—	Ro
3953.578	U	6	15	—	—	3951.43	La II	4	2 h	—	Me	3948.72	Xe I	—	[10]	—	Me
3953.525	Nd	60	60	—	—	3951.420	Ce	4	—	—	—	3948.674	Ti I	80 h	40	—	—
3953.516	Pr	150	100	—	—	3951.348	Mo	4	4	—	—	3948.649	Mo	6	10	—	—
3953.515	Dy	5	—	—	Kn	3951.328	Zr I	5	—	—	—	3948.621	Pr	9	2	—	—
3953.509	Cb	1 h	5 h	—	—	3951.313	Eu	3	—	—	—	3948.606	Eu	3	—	—	—
3953.47	Eu	6 W	1	—	—	3951.207	Ru I	10	6	—	—	3948.506	Ir	4	—	—	—
3953.395	Nd	20	8	—	—	3951.168	Fe	150	125	—	—	3948.454	Ce	2	—	—	—
3953.378	Sm	2	2	—	—	3951.168	W	5	12	—	—	3948.395	Pt I	60	5	—	—
3953.371	Gd I	100	50	—	—	3951.154	Nd	40	30	—	—	3948.35	Tb	20	15	—	Ed
3953.36	Pr	2	2	—	Me	3951.101	Th	2	2	—	—	3948.325	Nd	20	10	—	—
3953.246	Re	3	—	—	—	3951.097	Cr I	50	8	—	—	3948.317	Ir I	10	3	—	—
3953.201	Pr	15 d	5 d	—	—	3950.986	Mo	15	15	—	—	3948.29	Hg	—	[100]	—	Ps
3953.163	Cr I	60	12	—	—	3950.924	Xe I	—	[125]	—	IMe	3948.203	W	—	5	—	—
3953.159	W	10	12	—	—	3950.854	Eu	7	—	—	—	3948.163	Xe I	—	[60]	—	IMe
3953.155	Fe I	80	40	—	—	3950.81	Sr I	8 h	—	—	Sd	3948.15	C II	—	2	—	En
3953.154	Eu	4	—	—	—	3950.802	Ce	6	1	—	—	3948.108	Sm II	50	50	—	—
3953.12	Dy	3	1	m	—	3950.779	Tb	5	—	—	—	3948.107	Fe I	125	50	—	—
3953.078	Cb	3	5	—	—	3950.759	Hf	10 h	—	—	—	3948.067	Er	8 l	—	—	—
3953.067	Rh I	3	—	—	—	3950.748	Nd	10	6	—	—	3948.038	Th	3	1	—	—
3953.056	O I	—	[5]	—	Fh	3950.699	U	3	1	—	—	3947.982	W	10	9	—	—
3953.015	Cb	4	—	—	Me	3950.659	Pr	10	4	—	—	3947.973	Ce	20	3	—	—
3953.015	Tb	3	—	—	—	3950.61	Br	—	[30]	—	Bl	3947.959	U	2	8	—	—
3952.992	Mo	1	5	—	—	3950.610	Re	30 d	—	—	—	3947.93	Te	—	[10]	—	Bl
3952.949	U	15	—	—	—	3950.50	Ho	8	—	—	Kn	3947.832	Sm II	15	8	—	—
3952.917	Co I	100	75	—	—	3950.477	U	8	—	—	—	3947.775	Ti I	70	35	—	—
3952.902	W	8	8	—	—	3950.424	Ce II	10	3	—	—	3947.708	Ce	2	—	—	—
3952.890	Zr I	5	—	—	—	3950.417	Nd	20	10	—	—	3947.66	Kr II	—	[5 hl]	—	Me
3952.870	Nd	25	20	—	—	3950.416	Tb	20 d	—	—	—	3947.652	Th	3	1	—	—
3952.842	Mn	60	75	—	—	3950.412	Ru	10	10	—	—	3947.633	Pr	125 d	60 d	—	—
3952.768	Os	40	15	—	—	3950.399	Dy	50	—	—	—	3947.61	O I	—	[18]	—	Ps
3952.74	A	—	[15]	—	Rt	3950.394	Th	30	30	—	—	3947.608	Nd	5	—	—	—
3952.702	Fe I	8	1	—	—	3950.359	Yt II	60	100	—	—	3947.593	Ce	3	—	—	—
3952.678	Ru	20	30	—	—	3950.351	Er	30	10 h	—	—	3947.58	Eu	4 w	—	—	—
3952.620	Tb	2 w	—	—	—	3950.288	Zr	2 h	—	—	—	3947.532	Fe I	70	20	—	—
3952.616	Ir I	20	3	—	—	3950.257	Mo	4	4	—	—	3947.528	Cb	10	10	—	—
3952.606	Fe I	80	50	—	—	3950.231	V	20	10	—	—	3947.51	Tb	2	—	—	Ed
3952.60	Se II	—	[5]	—	Bt	3950.214	Ru I	12	15	—	—	3947.51	O I	—	[50]	—	Ps
3952.541	Ce II	60	30	—	—	3950.132	U	3	6	—	—	3947.509	U	10	10	—	—
3952.521	W	8	7	—	—	3950.126	Tb	4	—	—	—	3947.504	A I	—	[1000]	—	IHu
3952.451	Th	3	1	—	—	3950.118	W	9	12	—	—	3947.475	Ba I	5 h	—	—	Sz
3952.447	U	4	2	—	—	3950.004	Ru	10	8	—	—	3947.391	Fe I	1	—	—	—
3952.399	Cr I	60	18	—	—	3949.96	Cl II	—	[10]	—	Ks	3947.339	Th	8	3	—	—

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
3947.33	O I	—	[300] Ps	3944.621	U	8 2	—	3942.29	Xe I	—	[2] Me
3947.258	Ce	4	—	3944.617	Pr	8 3	—	3942.260	Pr	10	3
3947.25	Tb	5	—	3944.592	Eu	5 W	—	3942.253	U	6	8
3947.173	Mo	10	10	3944.58	Sb II	—	8	3942.24	Hg	—	[100] Ps
3947.127	Co I	20	2	3944.423	Er	12	—	3942.235	Ta	3	4 d
3947.122	Ce	4	—	3944.421	Nd	20	—	3942.21	Xe II	—	[2] Hu
3947.081	U	1	2	3944.375	Ir I	20	4	3942.203	Eu	15	2
3947.05	Gd	4	—	3944.349	Re	15	—	3942.20	Tb	15	8
3947.005	Fe I	50	20	3944.33	F II	—	[20]	3942.19	Ne	—	[7] Bn
3946.98	Br	—	[3] Bl	3944.29	Ga	—	2	3942.183	Mo	4	2
3946.98	S II	—	[5] Hn	3944.27	A	—	[50] Rt	3942.151	Ce II	35	8
3946.953	Pr	8	5	3944.254	Th	3	1	3942.144	Nd	15	4
3946.939	Dy	30	—	3944.20	Tb	6	—	3942.065	Th	8	5
3946.886	Mo	4	3	3944.190	Ru I	10	4	3942.063	Ru I	12	9
3946.880	U	1	3 h	3944.15	La II	—	2	3942.061	U	12	1
3946.87	Tb	150	30	3944.137	Pr	9	5	3942.050	Dy	4	—
3946.811	Nd	20	8	3944.130	U	8	15	3942.006	V I	15	5
3946.881	Ce	20	1	3944.126	Ni I	5 wh	—	3941.944	Zr II	4	1
3946.677	U	15	10	3944.093	Ce II	8	—	3941.868	Sm II	50	40
3946.66	Br II	—	[2] Bl	3944.07	Se	—	[20] Bt	3941.830	W	7	7
3946.635	Co	18	—	3944.058	Ir	2	—	3941.82	I I	—	[5] Db
3946.552	Eu	6	—	3944.032	Al I	2000	1000	3941.807	Gd	5	5
3946.506	Sm II	40	30	3944.019	Rh	5	4	3941.766	U	6	1
3946.406	Al II	—	[2] Sy	3944.016	Re	15	—	3941.761	Ir	3	—
3946.35	Dy	3	—	3944.014	Er	2	—	3941.757	Mo	6	2
3946.314	Ru I	8	3	3944.01	Eu	8 h	—	3941.732	Co I	200 wh	—
3946.311	W	9	8	3943.888	Ce II	40	15	3941.727	Th	8 h	1 h
3946.269	Ir I	50	15	3943.820	U	35	5	3941.72	Rn I	—	[25] Ra
3946.251	U	6	5	3943.80	Pb	—	5	3941.654	Ru	12	8
3946.224	Pr	8	1	3943.753	Pr	10	8	3941.625	Zr I	20	1 h
3946.217	Yt II	2	3	3943.694	Th	10	10	3941.585	Ce	5	—
3946.18	Eu	4 w	—	3943.666	Cb	20	50	3941.563	Eu	5 W	4
3946.166	Ce	6	—	3943.664	V I	50	18	3941.539	Re	20 d	—
3946.151	Th	20	20	3943.66	Tb	8	—	3941.52	F II	—	[6] Di
3946.10	A II	—	[25] Rt	3943.631	Gd	20	20	3941.515	Er	5	—
3946.05	Ca I	2	—	3943.621	Sm	8	3	3941.512	Nd	60	30
3946.048	Ce	2	—	3943.614	Cr I	18	4	3941.507	Pr	10	3
3946.012	Hf II	—	4 h	3943.602	Eu	3	—	3941.490	Cr I	200 r	60
3946.01	Br	—	[3] Bl	3943.594	Fe	2 h	—	3941.478	Mo	5	150
3945.980	W	1	5	943.57	Xe II	—	[10] Hu	3941.460	U	5	6
3945.968	Cr	50	7	3943.507	Mo	5	4	3941.45	Se	—	[20] B
3945.94	Dy	3	—	3943.498	U	6	10	3941.364	Th	2	—
3945.93	As II	—	10	3943.497	Ce	6	1	3941.35	Tb	4	—
3945.925	Ce	2	—	3943.47	As II	—	3	3941.33	In	—	3
3945.910	Re I	40	—	3943.371	Pr	5	3	3941.280	Fe I	60	10
3945.825	Th	10	8	3943.348	Fe I	40	8	3941.273	Cb	10	15
3945.82	Ce	2	—	3943.246	Gd	40	40	3941.254	V I	30	12
3945.74	Gd	3	—	3943.235	Sm II	40	25	3941.16	Tb	15	8
3945.726	U	2	3	3943.205	Ir	6	—	3941.154	Cr	15	8
3945.67	Eu	8 w	1	3943.191	Er	10	—	3941.110	Ir	6	—
3945.662	Pr	30	10	3943.138	Ce II	12	3	3941.089	U	3	6
3945.65	F II	—	[10] Di	3943.086	Mo	10	10	3941.05	Br	—	[6] Bl
3945.61	Ba I	5 h	—	3943.085	Eu	50	15	3940.972	Ce	10	2
3945.572	Ru	50	100	3943.06	Hf	3	—	3940.92	Kr	—	[5 whl] Me
3945.570	Cu II	—	2	3943.044	Mo	10	6	3940.887	Co I	100	—
3945.544	Gd	200 W	150	3943.000	Ce	3	—	3940.882	Fe I	150	80
3945.52	I I	—	[2] Bl	3942.95	U	4	2	3940.800	Sr I	20	—
3945.515	Th	20	15	3942.95	Ag	5 h	10 h	3940.64	Ce	8 s	—
3945.507	Ce	3	1	3942.94	Tb	6	—	3940.593	V I	15	4
3945.495	Cr	50	15	3942.938	Eu	15 W	—	3940.568	Rb II	—	[200] Rr
3945.48	Kr II	—	[5 hl] Me	3942.93	Kr	—	[20 whl] Me	3940.563	Ru	4	—
3945.424	Pr	12	4	3942.918	Pr	15	6	3940.55	Ho	12	4 h
3945.39	Tb	8	—	3942.855	Mn	75	75	3940.487	U	10	15
3945.364	Ce	2	—	3942.84	Ca	2	3	3940.40	Hg II	—	[2] Ps
3945.36	Hf II	8	6 h	3942.829	U	20	8	3940.377	Pr	10 d	3 d
3945.328	Co I	200	15	3942.746	Ce	50	20	3940.37	Ho	6	4 h
3945.250	Mo	10	6	3942.716	Rh I	60	25	3940.357	Eu	3 W	—
3945.206	W	5	6	3942.713	Mo	—	20	3940.338	Ce II	35	6
3945.17	V I	2	—	3942.692	Co I	8	—	3940.262	U	4	6
3945.160	Eu	5	—	3942.69	Eu	2 w	—	3940.24	I	—	[500] Ke
3945.126	Fe	30	10	3942.659	Sm	10	2	3940.152	Pr	80	15
3945.09	Hg	—	[100] Ps	3942.646	Th	10	8	3940.10	Tb	2	—
3945.04	O II	—	[20] Mh	3942.642	Qd	60	30	3940.044	Fe	2	—
3944.950	Co I	5 h	—	3942.631	Nd	25	25	3939.985	Eu	2 W	1
3944.924	Ce	6	—	3942.59	Hg	—	[100] Ps	3939.908	W	5	5
3944.899	Pr	30	12	3942.561	Re	10	—	3939.85	La II	2	3 h
3944.896	Fe I	15	8	3942.551	U	8	10	3939.835	Nd	20	4
3944.835	Ce	5	—	3942.536	Dy	30	5	3939.806	Er	2	—
3944.798	W	7	6	3942.533	Er	3	—	3939.77	Ce	2 h	—
3944.785	Ru	4	—	3942.505	K II	—	[30] Dm	3939.758	U	6	10
3944.752	Fe I	4	1	3942.46	I	—	[15] Ke	3939.70	Dy	3	2
3944.744	Sm	5	5	3942.443	Fe I	100	70	3939.69	Br	—	[15] Bl
3944.727	Re	30	—	3942.377	W	3	8	3939.672	Ba II	2	—
3944.692	Dy	300	150	3942.352	Eu	20 W	—	3939.656	Ce II	10	3
3944.687	Yt	3	—	3942.339	Pr	5	3	3939.643	Sm II	3	2

3939.6—3931.7 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
3939.60	Tb	200	200	3937.15	Tb	5	—	3934.791	Zr II	20	15
3939.60	Se II	—	[8]	3937.147	Ce	15 l	2	3934.752	Ce	107	—
3939.57	Sb II	—	3	3937.068	U	3	8	3934.707	Co	5	2
3939.566	Os	50	12	3937.056	Sm	15	6	3934.601	W	5	5
3939.548	Nd	20	3	3937.043	Th	15	10	3934.509	Ce	2	—
3939.518	Ce	18	1	3937.030	Pr	50	8	3934.470	U	2	1
3939.495	Mo	4	4	3937.018	Er	20	—	3934.46	K	—	[20]
3939.455	Eu	6 W	—	3937.00	Ho	2	2	3934.431	In II	—	[5]
3939.451	U	6	1 h	3936.991	Nd	15 d	6 d	3934.408	Cb	5	5
3939.441	W	8	10	3936.985	W	12	15	3934.40	Tb	10	—
3939.355	Er	4	—	3936.962	Ce	2	—	3934.387	Eu	5	—
3939.334	V I	40	15	3936.903	Re I	40	—	3934.30	Yb	2	4
3939.298	Cr	8	—	3936.79	In	—	18	3934.260	Mo	5	5
3939.23	Dy	3	—	3936.782	Ru	4	—	3934.257	Pr	12	2
3939.195	Eu	5	—	3936.761	Mn	25	50	3934.236	Ti I	30	2
3939.138	Mo	4	4	3936.744	U	5	5	3934.230	Fe	2	—
3939.127	Ce	4	—	3936.728	Mo	4	4	3934.229	Rh I	100	2
3939.111	U	6	12	3936.721	Nd	20	6	3934.17	Dy	12	—
3939.100	Ru	5	—	3936.715	Dy	10	—	3934.139	Cb	5	15
3939.066	Al II	—	[2]	3936.689	Pr	5	2	3934.123	In II	—	[10]
3939.044	Hf	8	—	3936.668	W	—	10	3934.121	Zr II	20	12
3939.03	F II	—	[30]	3936.632	Eu	20	—	3934.11	Br I	—	[2]
3938.982	Gd	20	40	3936.517	U	1	2	3934.107	Nd	5	—
3938.969	Fe II	4	4	3936.51	Ho	10	4 h	3934.093	Nd	20	—
3938.923	Er	4	—	3936.447	Cb	3	5	3934.076	Ce	6	—
3938.92	Xe II	—	[10]	3936.35	Ho	—	4 h	3934.013	V I	100	30
3938.915	Pr	4	1	3936.29	Dy	4	—	3933.985	U	6	—
3938.903	Co I	5	—	3936.282	V I	30	8	3933.914	Co I	60	—
3938.887	V I	15	1	3936.232	W	9	—	3933.905	Tb	4	—
3938.88	Kr II	—	[20 whl]	3936.221	La II	100	50	3933.901	Ir	20	8
3938.874	Nd	30	25	3936.21	Te	—	[5]	3933.731	Ce	60	60
3938.84	Ho	2	2 h	3936.158	Ru	4	—	3933.680	Ru	5	200
3938.774	Ce	3	—	3936.143	Mo	3	3	3933.677	Eu	10	—
3938.732	Th	15 w	10 w	3936.136	Nd	30	20	3933.666	Ca II	600 R	600 R
3938.722	Mo	8	10	3936.059	Zr II	10	4	3933.664	Hf II	20	15
3938.631	Er	20	3	3936.03	Dy	15	2	3933.664	Ir	20	—
3938.621	Al II	—	[2]	3936.023	Cb	5	200	3933.662	U	2	10
3938.62	Br	—	[10]	3936.008	U	8	2	3933.654	Co	80	—
3938.62	Ho	—	4	3935.985	Eu	10	—	3933.62	Ag	80	80
3938.593	Os	125	20	3935.970	Co I	400 R	15	3933.605	Fe I	200	200
3938.589	Ce	10	—	3935.953	Fe II	2	1	3933.592	Sm II	200	200 h
3938.547	Cb	—	100 h	3935.940	Th	5	3	3933.469	Th	6	—
3938.426	Mo	2	3	3935.927	Ce	6	—	3933.394	Cb	3	3
3938.424	Sm II	8	2	3935.917	Nd	5	1	3933.381	Sc I	60	60
3938.423	Mg I	10 w	3	3935.914	He I	—	[4]	3933.37	P	—	[50]
3938.38	Eu	4	—	3935.838	Rh I	40	12	3933.300	Pr	9	2
3938.352	U	8	—	3935.823	Pr	125	50	3933.294	S II	—	[80]
3938.341	Cr	40	3	3935.815	Fe I	100	8	3933.178	Zr I	9	—
3938.312	Pr	40	30	3935.760	Sm II	30	10	3933.030	U	5	10
3938.26	Eu	3	—	3935.75	Se	—	[6]	3933.013	Cb	3	3
3938.209	Dy	5	—	3935.725	Ba I	80 R	30 r	3932.98	Dy	10	—
3938.198	V I	30	12	3935.697	Mo	6	6	3932.979	Ce	6 s	1
3938.16	Tb	3	—	3935.647	Hf II	15	15	3932.978	Pr	25	8
3938.159	Ce	8	—	3935.642	Th	2	—	3932.971	Ir I	6	—
3938.153	Gd	10	20	3935.501	Ce	6	—	3932.97	Gd	10	10
3938.117	W	—	6	3935.461	Sm	2 h	—	3932.966	Sm II	6	3
3938.086	Ce II	35	6	3935.448	Cb	5	10	3932.921	Fe	8	4
3938.06	Dy	20	—	3935.440	W II	7 d	20	3932.917	Cu I	10	—
3938.04	Tb	4	—	3935.393	Gd I	10	10	3932.915	Th	10	3
3938.026	Ti I	18	2 h	3935.382	U	15	18	3932.794	Ce	3	—
3938.020	Fe	3	—	3935.36	Se	—	[60]	3932.630	Fe I	80	40
3937.990	Dy	5	—	3935.346	Ru I	5	—	3932.55	Tb	3	—
3937.965	Cb	5	10	3935.306	Fe I	40	8	3932.55	A	—	[25]
3937.949	Co I	7 h	—	3935.287	Co I	6	—	3932.523	La II	—	2 h
3937.929	Th	15	10	3935.25	Tb	50	8	3932.40	Hf II	3	10
3937.906	I	—	[25]	3935.188	Sm II	4	3	3932.393	Ce	3	—
3937.903	Ru I	20	15	3935.183	Mo	5	5	3932.366	Tb	12	—
3937.883	U	6	8	3935.18	Sr I	6 h	—	3932.30	S II	—	[10]
3937.876	Ba I	12	10	3935.180	Th	5	5	3932.287	Ru	3	—
3937.843	Ta	5	10	3935.15	Br II	—	[15]	3932.28	Eu	3 W	—
3937.807	Ce	12	—	3935.141	V I	40	25	3932.27	Fe	3	—
3937.762	Mn	15	15	3935.134	Pr	10 d	3 d	3932.253	Er	20	5
3937.694	Pr	10	2	3935.041	W	12	10	3932.230	Th	15	10
3937.636	Tb	15	—	3935.024	Mo	5	5	3932.228	Dy	30	—
3937.634	Ce II	15	1	3935.00	F II	—	[6]	3932.145	Ce	12	2
3937.627	W	10	12	3934.982	Rh I	3	2	3932.130	Pr	25	5
3937.619	Eu	2 W	—	3934.956	Mo	5	6	3932.026	U	35	50
3937.61	Lu	—	5 hl	3934.894	U	10	—	3932.017	Ti II	20	30
3937.575	Nd	20	6	3934.883	Pr	8	2	3931.938	S II	—	[15]
3937.529	V I	50	20	3934.844	Ir I	200	50	3931.935	W	2	2
3937.468	Eu	2 w	—	3934.823	Nd	60	30	3931.9	Bi II	—	[10]
3937.438	Cb	30	30	3934.818	Sm	4	8	3931.827	Ce	18	—
3937.332	Fe I	80	35	3934.813	Cb	1 h	5 h	3931.82	Rn	—	[250]
3937.223	I II	—	[12]	3934.812	Er	5	—	3931.794	Cb	1	20 h
3937.165	Dy	4	—	3934.801	Gd I	100	50	3931.785	Sb II	2	5

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities			
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
3931.759	Ru	50	70	—	Me	3929.26	Kr II	—	—	[20 h]	Me	3926.649	Cr	35	25	—	
3931.75	Hf	2	2	—		3929.260	Nd	30	15	—		3926.62	Lu	2	—	Me	
3931.72	Se	—	[8]	—	Bl	3929.256	Pr	40	30	—		3926.614	Cb	5	5	—	
3931.56	Se	—	[5]	—	Bl	3929.254	Co I	15	2	—		3926.608	Nd	15	12	—	
3931.537	Dy	200	—	—		3929.241	Mn	30	30	—		3926.591	Pr	9	3	—	
3931.528	Er	20	4	—		3929.23	Sb II	—	—	[2 h]	Lg	3926.530	He I	—	[7]	Ps	
3931.525	Os	40	12	—		3929.225	Er	3	—	—		3926.518	Re	10	—	—	
3931.488	U	25	6	—		3929.216	La II	400	300	—		3926.494	V	2	15	—	
3931.460	Cb	4	3	—		3929.212	Hf	2	1	—		3926.489	Rb II	—	[15]	Rr	
3931.43	Te	—	[5]	—	Bl	3929.212	Fe	15	8	—		3926.467	Mn	40	50	—	
3931.425	I	—	[3]	—	Ke	3929.209	Ce	2 h	—	—		3926.466	Ru	4	1	—	
3931.403	Mo	5	5	—		3929.205	Re	10	—	—		3926.441	Mo	4	3	—	
3931.377	Hf	10	3	—		3929.125	Ce	2 h	—	—		3926.424	Hf	10	—	—	
3931.369	Ce I, II	15	4	—		3929.124	Fe	10	5	—		3926.397	Pr	5 d	5	—	
3931.340	V I	25	20	—		3929.055	U	6	2	—		3926.338	K II	—	[20]	Dm	
3931.290	Dy	20	—	—		3928.99	Tb	3	—	—	Ed	3926.333	V	1	15	—	
3931.28	As II	—	15	—	Ro	3928.98	Eu	8 w	—	—	Kn	3926.327	Mo	3	3	—	
3931.24	A	—	[15]	—	Rt	3928.956	Ce	2	—	—		3926.324	Sm	20	2	—	
3931.227	Nd	6	2 h	—		3928.921	Eu	10 w	2	—		3926.322	Ti I	25	12	—	
3931.203	U	5	6	—		3928.914	Sm	25	3	—		3926.282	Ce	6	—	—	
3931.199	Re I	20	—	—		3928.911	Pr	30	8	—		3926.216	U	30	6	—	
3931.156	Sm II	4	2	—		3928.848	Ce	6	—	—		3926.167	Ce II	3	—	—	
3931.123	Fe I	35	15	—		3928.830	U	15	—	—		3926.13	Sr I	4 h	—	m	
3931.11	In	—	3	—	Sq	3928.788	Mo	5	5	—		3926.083	Ce	3	—	—	
3931.088	Ce I, II	35	8	—		3928.707	Re I	12	—	—		3926.038	Ir I	5	—	—	
3931.014	I	—	[400]	—	Ke	3928.703	Mo	5	5	—		3926.034	W	7	7	—	
3930.982	U	12	35	—		3928.66	Tm	15	5	—	Me	3925.989	Pr	3	3	—	
3930.970	W	10	12	—		3928.636	Cr I	150	40	—		3925.947	Fe I	50	30	—	
3930.965	Pr	9	3	—		3928.63	Cl II	—	—	[5]	Ks	3925.925	Ru I	60	100	—	
3930.942	Ta	5	3	—		3928.62	A	—	—	[125]	Rt	3925.874	Ce	3	—	—	
3930.81	U	—	3 h	—		3928.615	Pr	30	15	—		3925.832	Mo	1	30	—	
3930.806	Ce	12	3	—		3928.553	Ce	2	—	—		3925.71	A II	—	[3]	Rt	
3930.76	Tb	8	3	—	Ed	3928.541	Os	50	10	—		3925.65	Hg	—	[100]	Ps	
3930.667	Yt II	20	25	—		3928.450	U	—	3	—		3925.650	W	2	7	—	
3930.619	Pr	9	3	—		3928.438	Ir I	12	2	—		3925.649	Mo	—	20	—	
3930.592	Ce	3	—	—		3928.409	Os	40	10	—		3925.646	Fe I	80	50	—	
3930.522	Re	5 w	—	—		3928.318	Ce II	20	2	—		3925.583	Cs II	—	[25]	Sv	
3930.506	Nd	20	30	—		3928.295	Pr	4	2	—		3925.497	U	4	1	—	
3930.503	Eu II	1000 R	400 R	—		3928.285	U	1	5	—		3925.456	Pr	125	100	—	
3930.480	W	8	10	—		3928.281	Mo	8	8	—		3925.45	Tb	150	200	—	Ed
3930.47	La	—	3	—	Me	3928.272	Sm II	60	60	—		3925.340	Pt I	60	3	—	
3930.44	Eu	100 W	—	—		3928.229	Ir I	2	—	—		3925.309	U	—	2	—	
3930.430	U	6	10	—		3928.083	Fe I	15	15	—		3925.30	Lu	20	1	—	Me
3930.37	Sn II	—	[6]	—	Lg	3927.96	As	—	3	—	Ro	3925.274	Cu I	50	2 h	—	
3930.299	Fe I	600	400	—	S	3927.926	V I	50	40	—		3925.241	Ta	25 h	5 h	—	
3930.248	W	12	10	—		3927.922	Fe I	500	300	—	S	3925.240	V I	40	25	—	
3930.23	Ta	1	2	—	Ks	3927.88	Cl II	—	—	[6]	Kn	3925.23	Pb	—	2	Sx	
3930.203	Mo	5	5	—		3927.866	Dy	5	—	—	Ks	3925.200	Fe I	15	3	—	
3930.2	C	—	[6]	—	Jn	3927.79	Pb	—	2	—	Ki	3925.200	Sm	15	3	—	
3930.153	Dy	10	—	—	Kn	3927.755	U	3	5	—		3925.163	Co I	18	—	—	
3930.109	Yt	2 h	3	—		3927.712	Pr	8	8	—		3925.14	W	—	4 d	—	
3930.073	U	—	4	—		3927.66	Au I	5	6	—		3925.103	Os	30	10	—	
3930.023	V I	50	20	—		3927.63	Te	—	[5]	—	Bl	3925.100	Ce	2	—	—	
3930.022	Cb	—	10 h	—	Me	3927.615	Mo	—	10	—		3925.096	Th	10	5	—	
3929.997	Os	80	12	—		3927.60	Re I	20 w	—	—	m	3925.09	La II	4	3 h	Me	
3929.961	Ce	8	1	—		3927.574	Ce	2 h	—	—		3925.031	U	5	1	—	
3929.953	Nd	10	6	—		3927.570	Hf	10	1	—		3925.00	Ce	2	—	—	
3929.892	Eu II	7 w	—	—		3927.558	La I	40	—	—		3925.00	Sr	4 w	2	Sd	
3929.88	Tb	10	—	—	Ed	3927.454	Pr	80	35	—		3924.996	Cb	10	15	—	
3929.877	Pr	8	6	—		3927.450	Ce I, II	15 l	2	—		3924.995	Pr	2	2	—	
3929.875	Ti I	70	35	—		3927.446	Eu	2 h	—	—		3924.984	Nd	20	20	—	
3929.851	Ru	3	—	—		3927.425	Th	15	10	—		3924.885	Zr I	3	—	—	
3929.843	Re I	100	—	—		3927.41	Pb II	—	5 h	—	Sx	3924.81	Tb	10	3	—	Ed
3929.819	Eu	10 w	—	—		3927.404	Zr I	10 h	—	—		3924.803	Ce	10	1	—	
3929.80	In II	—	[5]	—	Ps	3927.362	Ti I	7	—	—		3924.785	U	6	3 h	—	
3929.75	Tb	5	—	—	Ed	3927.35	Tb	2	—	—	Ed	3924.695	W	8	9	—	
3929.730	V II	3	35	—		3927.29	P	—	—	[30]	Gu	3924.69	La	—	3	—	Me
3929.722	U	2	4	—		3927.181	Th	15	10	—		3924.674	Re	5 w	—	—	
3929.697	Cr	35 wh	—	—		3927.164	Ce	2	—	—		3924.673	Sm	2	—	—	
3929.671	Th	30	20	—		3927.15	Tb	4	—	—	Ed	3924.658	V I	35	25	—	
3929.671	Ce	6	—	—		3927.106	Nd	80	50 s	—		3924.644	Ce I, II	3	—	—	
3929.652	Mn	12	25	—		3927.001	Ce	8	1	—		3924.633	Ru	6	5	—	
3929.584	Mo	—	25	—		3926.97	Eu	2 W	—	—	Kn	3924.543	Ce	18	5	—	
3929.584	Tm	70	50	—	Me	3926.955	Mo	—	20	—		3924.54	Ho	—	4 h	—	Ex
3929.56	Br	—	[15]	—	Bl	3926.938	U	5	10	—		3924.54	Br	—	[3]	Bl	
3929.554	Sm	2	—	—		3926.922	Pd I	2	—	—		3924.529	Ti	70	35	—	
3929.535	Hf II	3	1 h	—		3926.904	Ce	3	—	—		3924.507	Pr	5	—	—	
3929.53	In II	—	[10]	—	Ps	3926.840	Re	10 h	—	—		3924.503	U	5	5	—	
3929.530	Zr I, II	100	6	—		3926.836	Fe	5	1	—		3924.488	Cb	5	10	—	
3929.46	Cs	—	[2]	—	Bs	3926.834	Ba	5	5	—		3924.485	Nd	20	8	—	
3929.435	Zr	5 h	—	—		3926.778	Zr I	25 h	1 h	—		3924.44	Si	—	3	—	Sy
3929.42	Tb	2	—	—	Ed	3926.770	Os	30	10	—		3924.427	Ir I	15	2	—	
3929.33	Dy	10	—	—	Kn	3926.728	U	10	1 h	—		3924.40	Tb	4	3	—	Ed
3929.315	W	1	5	—		3926.711	Th	10	8	—		3924.39	Ga II	—	25 W	—	Sy
3929.293	Cb	15	15	—		3926.680	Gd	5	—	—		3924.371	W	9	8	—	

3924.3—3916.6 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
3924.35	In II	— [10]	Ps	3921.792	Zr I	100	4	3918.92	Hg II	— [200]	Ps
3924.272	U	15	—	3921.785	Re	5	—	3918.90	Nd	20	4
3924.25	Gd	10	—	3921.767	Mo	3	1	3918.86	Lu	4	—
3924.248	Ce	4	—	3921.762	Mn	20 h	20 wh	3918.856	Pr	100	30
3924.179	Fe	2	—	3921.76	Tb	3	—	3918.82	Tb	8	—
3924.144	Pr	100	15	3921.731	Ce I	25 l	1	3918.646	Fe I	60	40
3924.10	Br II	— [35]	Bl	3921.69	Cs	—	[4]	3918.612	Sm II	25	4
3924.089	Re	10	—	3921.68	Kr II	—	[6 hl]	3918.599	W	12	9
3924.075	Mn	20	20 h	3921.674	Cb	3	2	3918.59	Ca	3	3
3924.02	Se II	— [2]	Bl	3921.65	Li I	2	—	3918.556	Er	4	—
3924.013	I II	— [5]	Ke	3921.550	U	8	8	3918.54	Dy	8	—
3923.970	Fe	2	—	3921.541	Mo	—	20	3918.518	Eu	20 w	—
3923.94	In II	— [2]	Ps	3921.535	La II	400	200	3918.512	Ta	25	10
3923.920	U	8	10	3921.424	Ti I	40	6	3918.50	Te	—	[5]
3923.904	Hf II	12	12	3921.406	Pr	10	2	3918.500	Th	3	1
3923.821	Pr	9	3	3921.39	Dy	5 h	—	3918.420	Fe	15	10
3923.808	Th	5	—	3921.346	Cb	—	10 h	3918.320	Fe I	20	10
3923.80	Er	3	—	3921.267	Cu I, II	40	1 h	3918.315	Mn	40	50
3923.75	Ca	2	2	3921.264	Tb	4	—	3918.285	Th	5	1
3923.748	Mo	10	20	3921.260	Fe	2	—	3918.276	Ce	60	6
3923.681	Sm	10	2	3921.236	U	8	6	3918.270	Er	4	—
3923.639	U	6	—	3921.180	Fe	2 h	—	3918.264	Nd	10	6
3923.580	Re I	20	—	3921.082	Ce	4	—	3918.25	Gd	10	10
3923.562	Pr	6	8	3921.022	Cr I	150	40	3918.25	Yt I	6	3
3923.522	Ir I	30	—	3920.965	Nd	40	15	3918.213	Sc	2 h	3 h
3923.512	Ce	3	—	3920.923	Mo	5	5	3918.208	W	1	3
3923.503	Sc II	3	5	3920.915	Ru I	20	20	3918.158	Eu	7	2
3923.483	S II	— [200]	Hn	3920.879	Re	40 W	—	3918.154	U	—	2
3923.467	Ru	60	100	3920.870	Os	20	12	3918.091	Hf II	20	12
3923.465	Zr I	3	1	3920.840	Fe I	7	2	3918.065	U	3	8
3923.439	Cu II	2	1 h	3920.783	Ce	3	—	3918.052	Er	5 s	—
3923.394	Dy	30	—	3920.758	Cb	1	50 h	3918.051	Gd	10	10
3923.38	U	—	2 h	3920.733	Co I	25	—	3918.046	Nd	40	6
3923.38	Se	—	[8]	3920.72	Tb	10	3	3918.010	Th	10 h	5
3923.37	Ho	5	2 h	3920.68	S	—	[8]	3917.967	Sm	4	—
3923.35	Br	—	[15]	3920.677	C II	—	200	3917.95	Se II	—	[5]
3923.345	Gd	6	4	3920.65	Br	—	[15]	3917.915	Pr	10 h	5 h
3923.33	Tb	6	3	3920.641	Cu II	—	2	3917.83	Br I	—	[4]
3923.327	Mn	10	20	3920.581	Co I	8	—	3917.824	U	6	12
3923.300	Dy	10	—	3920.54	In	—	18	3917.818	Eu	5 w	—
3923.255	Gd	10	—	3920.533	U	6	2	3917.779	Mo	15	5
3923.110	Nd	3	1	3920.524	Pr	30	10	3917.77	A	—	[3]
3923.109	Ce	15	4	3920.487	V I	35	15	3917.710	Ru	3	—
3923.054	U	15	6	3920.346	U	—	2	3917.681	Eu	5 w	—
3923.053	K II	— [20]	Dm	3920.33	Ce	2 h	—	3917.648	Nd	20	15
3922.961	Pr	4	3 h	3920.260	Fe I	500	300	3917.644	Ce	18	3
3922.960	Pt I	100	20 r	3920.259	Th	8	5	3917.642	W	8	8
3922.915	Ta	100	10 h	3920.198	Cb	30	100	3917.64	Kr II	—	[50 whl]
3922.914	Fe I	600	400	3920.143	Co I	20	—	3917.611	U	6	5
3922.908	Mn	5	5 w	3920.14	Kr II	—	[200 hl]	3917.596	Cr I	20	12
3922.863	Ce	8	—	3920.095	Sm	3	2	3917.57	Cl II	—	[18]
3922.779	Ta	100	15	3920.079	Mo	3	3	3917.545	Mo	15	10
3922.752	Co I	100	—	3920.040	W	5	5	3917.448	Hf II	5	15
3922.74	Tb	50	8	3920.00	I	—	[5]	3917.438	Sm II	20	15
3922.71	P *	— [50]	Gu	3919.989	V I	25	7	3917.391	U	3	3
3922.695	Sm II	8	4	3919.923	Nd	20 d	6 d	3917.372	Dy	5	—
3922.682	W	—	2	3919.819	Ti I	20	2	3917.32	Tb	6	3
3922.668	Mn	20	—	3919.813	Ce	45	2	3917.298	Dy	5	—
3922.661	Mo	3	3	3919.720	Cb	2	100	3917.282	Eu	20 w	—
3922.609	Th	5 h	—	3919.719	U	5	5	3917.28	W	—	6
3922.533	Eu	3	—	3919.635	Co I	4	1	3917.275	Re I	100 w	—
3922.444	Zr II	2	—	3919.620	Pr	35	15	3917.258	Th	8	1
3922.431	V I	80	40	3919.6	bh Sr	4	—	3917.252	Ce	6	—
3922.427	U	6	8	3919.54	Tb	40	15	3917.229	Pr	25	10
3922.421	Ta	5	50	3919.51	Br	—	[15]	3917.20	Rn I	—	[25]
3922.385	Sm II	60	60	3919.453	Mo	—	20	3917.185	Fe I	150	70
3922.351	Cb	5	10	3919.45	Ho	6	4	3917.14	V	2	—
3922.335	Ru	4	—	3919.343	U	3	4	3917.113	Co I	80	10
3922.335	W	6	7	3919.338	Ta	2	—	3917.064	U	1	2
3922.320	Mo	10	10	3919.279	O II	—	[35]	3917.06	Se II	—	[20]
3922.272	Re	10	—	3919.2	Eu	3 w	—	3916.980	Cr I	30	8
3922.259	Rb II	— [10]	Rr	3919.165	Cb	5	5	3916.94	Tb	4	—
3922.245	Pr	4	3	3919.159	Cr I	300 r	125	3916.925	Mo	8	5
3922.221	Th	8	3	3919.145	Dy	4	—	3916.90	Kr II	—	[3 hl]
3922.194	Rh I	15	8	3919.11	Re	8	—	3916.895	Ce	12	2 h
3922.16	In II	— [10]	Ps	3919.106	Eu	20	—	3916.836	Eu	10 W	—
3922.09	Tb	20	8	3919.070	Fe I	15	7	3916.802	Pr	4	4
3922.08	In II	— [10]	Ps	3919.062	Ir I	4	—	3916.733	Fe	100	80
3922.039	Sm II	40	6	3919.003	N II	—	[35]	3916.730	Th	15	10
3922.037	U	—	2	3919.003	Th	10	1	3916.70	Cl II	—	[20]
3922.033	Os	30	10	3919.00	Tb	6	—	3916.683	Ce	6	—
3922.005	Ce	2 s	—	3919.000	Cb	5	5	3916.666	Gd	10	—
3921.990	Ru	3	—	3918.977	C II	—	80	3916.645	Zr I	2	—
3921.905	V I	35	20	3918.971	Os	30	10	3916.64	Tb	4	3
3921.886	Er	20	—	3918.946	Ce	2	—	3916.609	Mn	12	—

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
3916.589	Gd	150 w	100	-	3914.155	Eu	5 w	-	-	3911.97	Eu	4 w	-	Kn
3916.530	Ce	2	-	-	3914.131	Ca	-	2 h	-	3911.951	O II	-	[150]	Fl
3916.527	U	12	3	-	3914.10	Br II	-	[10]	Bl	3911.945	Mo	5	5	-
3916.49	Se II	-	[8]	Bl	3914.073	Sm	3	3	-	3911.914	Th	8	-	-
3916.47	Tm	80	8	Me	3913.994	Ce II	10	2	-	3911.911	Er	5	-	-
3916.458	Pr	6	2	-	3913.96	Ho	3	-	Kn	3911.909	Nd	12	6	-
3916.433	Mo	5	5	-	3913.95	Dy	8	-	m	3911.82	Cr I	10	-	Ct
3916.413	V II	15	40	-	3913.92	Cl II	-	[30]	Ks	3911.812	Os	30	5	-
3916.413	Th	10	3	-	3913.918	Re I	30	-	-	3911.810	So I	150	30	-
3916.400	W	5	4	-	3913.826	Th	10	8	-	3911.80	Ho	3	-	Kn
3916.359	Sm	6 h	5 h	-	3913.81	Se II	-	[8]	Bl	3911.798	Pr	8	2	-
3916.347	U	8	2	-	3913.80	U	-	5	-	3911.775	Re	3	-	-
3916.25	Hg II	-	[18]	Ps	3913.791	Gd	10	10	-	3911.77	Lu	3 h	-	Me
3916.243	Cr I	100	60	-	3913.79	Tb	2	-	Ed	3911.726	Ce	3	-	-
3916.141	Ce	20	4	-	3913.745	Eu	5 W	1	-	3911.699	Fe	1	-	-
3916.104	Ti	10	1	-	3913.72	Dy	2	-	m	3911.677	Dy	5	1	Kn
3916.083	U	2	-	-	3913.690	Nd	8	2 h	-	3911.673	U	18	18	-
3916.045	La II	400	400	-	3913.678	Mo	4	3	-	3911.66	Gd	5	-	Kn
3915.995	Eu	20	-	-	3913.638	W	-	10	-	3911.606	Eu	5	-	-
3915.948	Nd	25	20	-	3913.638	Sm	10	3	-	3911.58	A	-	[10]	Rt
3915.938	Zr II	25	15	-	3913.635	Fe I	100	25	-	3911.558	Er	8	-	-
3915.884	U	20	30	-	3913.628	Dy	6	-	Kn	3911.419	Mn	15	15	-
3915.876	Ti I	15	1	-	3913.561	Pr	80	30	-	3911.362	Ti I	7	-	-
3915.843	Cr I	125	80	-	3913.56	V	2	1	Me	3911.308	Th	5	3	-
3915.69	Er	3	1	-	3913.552	Nd	4	-	-	3911.307	Pr	5	3	-
3915.661	Mo	3	1	-	3913.531	Mo	4	4	-	3911.303	Ce	15	1	-
3915.633	Ce	3	-	-	3913.513	Rh I	4	2	-	3911.293	W	6	5	-
3915.605	Dy	80	-	-	3913.505	U	4	2	-	3911.28	Yb	8	-	-
3915.572	U	6	-	-	3913.464	Ti	40	70	-	3911.231	U	3	3	-
3915.522	Ce	10	3	-	3913.45	Tb	8	-	Ed	3911.189	Ti I	40	5	-
3915.510	Co I	2	1	-	3913.37	Cs	-	[2]	Ba	3911.169	Nd	25	25	-
3915.507	Cr	15	10	-	3913.365	Sm	5	8	-	3911.144	Ru	6	2	-
3915.467	Pr	40	20	-	3913.362	Mo	8	8	-	3911.123	Mn	20	-	-
3915.460	W	-	7	-	3913.357	Ce	3	-	-	3911.092	Mo	20	20	-
3915.45	Tb	30	3	Ed	3913.257	W	-	5	-	3911.09	Se II	-	[2]	Bt
3915.438	Mo	6	50	-	3913.250	U	8	3	-	3911.003	Th	5	1	-
3915.384	Ir	150	50	-	3913.245	Eu	4	1	-	3911.001	Fe	6	2	-
3915.36	V	2	-	Me	3913.210	Fe	2 h	1 h	-	3910.978	U	10	3	-
3915.242	Eu	5 w	-	-	3913.145	Ce	3	-	-	3910.919	Sm II	1	2	-
3915.239	W	-	5	-	3913.14	Cb	5	5	m	3910.906	Pt I	5	2	-
3915.233	Re	2	-	-	3913.095	Pd I	2	-	-	3910.85	Tb	5	-	Ed
3915.225	Ce	3	-	-	3913.013	Ru	3	-	-	3910.844	Fe I	30	10	-
3915.219	U	15	1	-	3913.013	Cb	5	10	-	3910.806	La II	10	5 h	-
3915.216	I	-	[18]	Ke	3913.012	Th	15	15	-	3910.790	V I	35	20	-
3915.211	Th	15 h	1 h	-	3912.979	Ni I	5	-	-	3910.703	Ce	12	2 h	-
3915.18	Br	-	[3]	Bl	3912.970	Sm II	20	5	-	3910.572	Pr	10	-	-
3915.131	Nd	20	12	-	3912.898	Pr	150	80	-	3910.57	Tb	2	-	Ed
3915.125	V I	15	3	-	3912.895	Bi	2 h	2 h	Om	3910.512	Er	3	-	-
3915.083	W	-	7	-	3912.886	V I	40	15	-	3910.502	U	1	3 h	-
3915.014	Mo	3	1	-	3912.88	Kr II	-	[5 hl]	Me	3910.40	Tb	5	-	Ed
3915.0	Li I	200 wh	-	Fl	3912.85	Dy	5	1	m	3910.301	Sm	4	1	-
3914.957	U	2 h	1 h	-	3912.826	Rh I	2	1	-	3910.241	U	1	4	-
3914.949	Ce	18	2	-	3912.822	W	7	6	-	3910.239	Gd	10 h	10	-
3914.940	Nd	2	-	-	3912.81	In	-	15	Sq	3910.14	Eu	5 w	1	m
3914.913	Ir	20	3	-	3912.76	Tb	5	8	Ed	3910.13	Tb	4	3	Ed
3914.877	Dy	50	-	-	3912.748	Mn	5	5	-	3910.086	Sm II	5	5	-
3914.872	Pr	6	3	-	3912.745	U	2	4	-	3910.05	Ti	-	[3]	Sx
3914.867	Er	15	1	-	3912.745	Gd	5	-	-	3909.944	Sm	3	-	-
3914.853	Ru I	20	15	-	3912.614	Pr	10	5	-	3909.943	Gd	5	-	-
3914.84	Eu	4 w	-	-	3912.59	Kr II	-	[70]	Me	3909.934	Co I	200 W	-	-
3914.764	Pr	10	8	-	3912.588	Ti I	15	-	-	3909.934	Ce	12	1	-
3914.76	A	-	[25]	Rt	3912.544	Dy	5	-	Kn	3909.917	Ba I	50 R	20 r	-
3914.736	Ti I	18	2	-	3912.477	I	-	[25]	Ke	3909.908	Eu	10	1	-
3914.732	U	12	8	-	3912.448	Fe	2 h	1 h	-	3909.894	V I	50 w	30 w	-
3914.73	Tb	2	-	Ed	3912.44	Ho	4	2	Ex	3909.835	Fe I	40	12	-
3914.73	Ba II	-	[15]	Rs	3912.436	Ce I, II	50	5	-	3909.752	Ce	6	1	-
3914.717	Au I	15	3	-	3912.435	Ta	15	10 h	-	3909.706	U	3	6	-
3914.701	Cb	30	100	-	3912.43	Eu	5	1	-	3909.672	V I	15	8	-
3914.59	Tb	5	-	Ed	3912.429	Er	12	-	-	3909.669	Fe I	20	5	-
3914.47	Th	2	1	-	3912.410	Ir	2	-	Ab	3909.620	Pr	20	10	-
3914.417	Ce	2	-	-	3912.408	U	6	8	-	3909.595	Cb	8 l	10 w	-
3914.389	Sm	6	-	-	3912.310	Ni	2	-	-	3909.57	Er	4	-	-
3914.338	Zr II	70	8	-	3912.285	Th	15	15	-	3909.56	Ho	2	-	Kn
3914.335	Cr	3	2	-	3912.268	Pr	10	3	-	3909.548	Mo	6	6	-
3914.335	Ti I	50	10	-	3912.25	Tb	5	-	Ed	3909.54	Tb	15	8	Ed
3914.330	V II	25	70 wh	-	3912.234	U	2	1	-	3909.49	Ti II	-	[2]	Sx
3914.29	Hg II	-	[100]	Ps	3912.228	Nd	20	20	-	3909.477	I I	-	[7]	Ke
3914.281	Fe I	15	3	-	3912.207	V I	50	20	-	3909.376	Au I	10	15	-
3914.28	Br II	-	[150]	Bl	3912.189	Ce II	25	3	-	3909.37	Br	-	[2]	m
3914.27	Sb	3	2 h	-	3912.127	Ta	10	3 s	-	3909.332	Au	15	1 h	-
3914.268	U	10	18	-	3912.112	Ru	10	8	-	3909.313	Ce II	35	3	-
3914.26	P	-	[100 l]	Gu	3912.088	O II	-	[5]	Fl	3909.312	Pr	4	2	-
3914.19	Au	10	4	-	3912.05	Fe	5 wh	5 wh	-	3909.276	Nd	15	10	-
3914.190	W	-	4	-	3911.999	Cr	40 wh	-	-	3909.273	Sm	5	5	-
3914.175	Ce	6	1	-	3911.989	Pr	20 d	6	-	3909.247	Gd	3	-	-

3909.1—3901.1A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3909.18	Hf	3		3 d	Me	3906.151	Zr	3		-	-	3903.634	Eu	10		-	-
3909.17	Pb II			40	Sx	3906.104	Ce	2		-	-	3903.534	Ce	3		-	-
3909.15	Tl II			[3]	Sx	3906.096	Nd	15		10	-	3903.510	Nd	10		2	-
3909.150	Tb	15		3	Kn	3906.093	Pr	6		8	-	3903.412	Sm	60		60	-
3909.075	Ru	30		50	-	3906.037	Fe II	2 w		2 w	-	3903.342	Ce	15		3	-
3909.065	U	5		7	-	3906.010	Ba I	4		2	-	3903.332	Dy	8		-	Kn
3909.045	Ce	6		1	-	3905.991	Ru	6		3 h	-	3903.298	W	6		7	-
3908.973	Cb	10		8	-	3905.970	W	8		7	-	3903.262	U	10		1	-
3908.931	Ni I	2		-	-	3905.95	Dy	6		1	Ed	3903.262	V II	3		3	-
3908.834	Ir	5		-	-	3905.920	Ce	3		-	-	3903.240	Eu	10 W		-	-
3908.765	Ce	12		2	-	3905.896	U	8		-	-	3903.164	Cr I	35		30	-
3908.765	Ru	12		12	-	3905.886	Nd	40		30	-	3903.163	Cu II	-		5	Sh
3908.755	Cr I	200		150	-	3905.876	Yb	2		10	-	3903.120	Ce	2		2	-
3908.682	U	2		3	Ed	3905.85	Xe II	-		[5]	Hu	3903.11	Tb	3		-	Ed
3908.66	Tb	4		3	-	3905.85	Ce	3		-	-	3903.093	Th	15		5	-
3908.612	Mo	-		30	-	3905.83	Tb	2		-	Ed	3902.963	Mo I	1000 R		500 R	-
3908.594	Cb	3		5	-	3905.78	Ho	30		6	Ex	3902.948	Fe I	500		400	S
3908.543	Ce I, II	20		3	-	3905.721	I I	-		[10]	Ke	3902.915	Cr I	100		100	-
3908.488	Th	3		2	-	3905.659	Cr	2		4	-	3902.89	Ce	8		1	-
3908.473	U	8		10	-	3905.657	Eu	3		-	-	3902.849	Ir I	8		2	-
3908.431	Pr	100		60	-	3905.651	Gd	50		50	-	3902.84	Cl II	-		[9]	Ks
3908.418	Er	10		-	-	3905.61	Tb	10		-	Ed	3902.821	Re	3		-	-
3908.408	Ce	30		6	-	3905.6	Rn	-		[3]	Rc	3902.816	Ru	5		-	-
3908.331	U	10		1	-	3905.56	Dy	6		-	m	3902.766	Er	10		1	-
3908.317	V	50		2 h	-	3905.555	Nd	10		10	-	3902.745	Ce	2		-	-
3908.258	Sm	6		-	-	3905.55	Ho	15		8	Ex	3902.717	Gd I	25		-	-
3908.249	Mo	5		3	-	3905.528	Si I	20		15 W	-	3902.684	W	5		4	-
3908.202	Re	25		-	-	3905.451	Ir I	8		-	-	3902.662	Ir I	8		8	-
3908.162	Mn	3		3	-	3905.415	Er	18		1	-	3902.583	Re	6		-	-
3908.146	Gd	5		3 h	-	3905.37	Si	-		4	Sy	3902.576	La I	20		-	-
3908.094	Ce II	8		1	-	3905.298	Ce	6		-	-	3902.561	U	18		18	-
3908.076	Tb	20		-	Kn	3905.285	Ta	6 h		2	-	3902.558	V I	6		2	-
3908.033	Pr	100		50	-	3905.190	Th	30		30	-	3902.509	Ce	3		-	-
3907.964	Ce	2		-	-	3905.158	Ru	3		-	-	3902.506	Ir I	10		15	-
3907.937	Fe	100		60	S	3905.124	U	3 h		-	-	3902.470	Pr	60		40	-
3907.912	Tb	5		-	Kn	3905.120	Re	20		-	-	3902.459	Th	8		5	-
3907.91	Xe II			[50 hl]	Hu	3905.11	Te	-		[5]	Bl	3902.453	Nd	10		8	-
3907.896	Ir I	10		2	-	3905.1	Cd I	8		-	Sd	3902.44	Ce	2		1	-
3907.843	Nd	20		12	-	3905.019	Mo	-		5	-	3902.404	Gd	100		80	-
3907.79	Tb	3		3	Ed	3904.965	Mn	10		10 d	-	3902.39	Dy	5		-	m
3907.778	Cr	30		10	-	3904.922	Ce	2		1	-	3902.35	Tb	10		-	Ed
3907.753	Ir I	4		-	-	3904.914	Eu	8		-	-	3902.324	Sm II	10		-	-
3907.736	Sb	-		[8]	Lg	3904.853	U	8		15	-	3902.272	Ce	2		-	-
3907.675	Fe	2		1	-	3904.85	Se II	-		[25]	Bt	3902.257	U	1		2	-
3907.65	Tb	3		-	Ed	3904.828	Yb	12		150	-	3902.250	V I	20		5	-
3907.650	Au	5		3	-	3904.806	Cs	-		[4]	Sv	3902.24	Ho	8		6	Ex
3907.639	Ce	2		1	-	3904.800	Pr	6		2	-	3902.13	Ce	2		-	En
3907.59	Ag	3		2 h	-	3904.785	Ti I	70		35	-	3902.123	In II	-		[10]	Ps
3907.558	U	6		8	-	3904.78	P	-		[100]	Gu	3902.122	Th	10		10	-
3907.519	V	-		2	Me	3904.63	Fe	2		-	-	3902.108	Cr	40		30	-
3907.476	Sc I	125		25	-	3904.587	Yt	3		3	-	3902.076	In II	-		[18]	Ps
3907.470	Fe	15		6	-	3904.587	Er	10		1	-	3902.072	Ru	4		-	-
3907.445	Ce	6		2	-	3904.582	Ce II	6		1	-	3902.024	In II	-		[18]	Ps
3907.44	O II	-		[18]	Mh	3904.565	U	8		8	-	3901.99	S	-		[20]	Hn
3907.342	Th	8		3	-	3904.472	V I	20		7	-	3901.98	Tb	15		3	Ed
3907.296	Pr	8		3	-	3904.45	Ho	4		2	Kn	3901.955	F II	-		[15]	Di
3907.289	Ce	35		6	-	3904.402	V I	2		-	Me	3901.95	B	3		2	-
3907.202	W	6		5	-	3904.4	C	-		[6 h]	Jn	3901.903	Hg I	15		5	-
3907.186	I II	-		[18]	Ke	3904.393	Pt I	5		1	-	3901.852	F II	-		[3]	Di
3907.17	V	2 h		2	m	3904.340	Ce I, II	12		3	-	3901.850	Nd	30		30	-
3907.150	Sn	-		4	-	3904.305	Mn	5		5	-	3901.833	W	10		10	-
3907.125	Gd	100 W		100	-	3904.299	U	8		15	-	3901.787	U	1		2	-
3907.124	Sm	10		15	-	3904.289	Gd I	10		10	-	3901.769	Mo	15		20	-
3907.110	Eu II	1000 RW		500 R	-	3904.224	Rh I	3		2	-	3901.708	Os	150		20	-
3907.018	U	5		1	-	3904.218	V I	10		2	-	3901.689	V I	5		-	-
3906.976	Mo	5		5	-	3904.186	Tb	4		-	Kn	3901.681	Eu	5 w		-	-
3906.933	Cs II	-		[20]	Sv	3904.185	Sm	3		1	-	3901.68	Tb	6		3	Ed
3906.924	Ce	8		3	-	3904.182	Cb	10		20	-	3901.679	Pr	10		3	-
3906.916	Mo	5		5	-	3904.160	Ce	4		-	-	3901.670	Th	5		-	-
3906.906	Cb	5		5	-	3904.14	Dy	20		-	Kn	3901.66	Er	2		-	-
3906.89	Hf	3		3 d	m	3904.089	Th	20		20	-	3901.551	U	15		-	-
3906.805	Sm II	6		5	-	3904.052	Co I	8		-	-	3901.53	Se	-		[5]	Bl
3906.796	Th	8		-	-	3904.035	Mg I	2		12	-	3901.53	Tl II	-		[12]	El
3906.751	Fe	10		10	-	3904.006	U	8		8	-	3901.513	Zr I	8		-	-
3906.748	V I	50		20	-	3903.993	Er	5		-	-	3901.35	Tb	50		8	Ed
3906.53	Tb	4		-	Ed	3903.985	W	10		10	-	3901.344	W	2		6	-
3906.482	Fe I	300		200	S	3903.932	Ce	10		3	-	3901.338	Dy	25		-	-
3906.480	Mo	5		10	-	3903.918	Eu	10 W		-	-	3901.304	Ce	10		2	-
3906.452	Ce	8		2	-	3903.908	Pr	10		8	-	3901.25	Br	-		[8]	Bl
3906.410	Hg I	25		15	-	3903.906	Er	5		1 h	-	3901.242	Ru I	50		12	-
3906.316	Er	25		12	-	3903.900	Fe I	100		80	-	3901.158	Th	10		8	-
3906.294	Co I	150		-	-	3903.819	F II	-		[10]	Di	3901.152	V I	50		3 h	-
3906.291	Pt I	2		1 h	-	3903.77	Zr II	1		2	-	3901.15	Kr II	-		[10 hl]	Me
3906.26	Ho	3		3	-	3903.722	Pt I	2		1	-	3901.132	Ce	3		-	-
3906.25	Kr II	-		[150 hl]	Me	3903.638	Hg I	3		-	-	3901.13	I	-		[3]	Ke

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R	
3901.096	Re I	10	-	3898.55	Ho	6	8	3896.143	Nd	20	10
3901.09	Dy	4	-	3898.544	Dy	100	-	3896.132	U	3	6
3901.056	Sm	3	2	3898.530	Er	30	10	3896.111	Re	25	-
3901.005	Os	10	5	3898.514	U	6	3	3896.04	Tb	25	8
3900.960	Ti I	25	2	3898.508	Sm	-	4	3895.991	Zr	-	3
3900.918	Eu	5 w	-	3898.50	Eu	2 W	-	3895.969	Tb	3	-
3900.91	W	-	15	3898.494	Ti I	20	5	3895.968	Gd	10	-
3900.901	Re I	20	-	3898.494	Co I	80 r	6	3895.946	U	2 h	3 h
3900.886	Th	30	30	3898.48	Gd	10	10	3895.905	Nd	8	-
3900.886	Sm II	10	10	3898.477	Th	10	8	3895.900	Cb	10	30
3900.883	Ce	3	1	3898.44	I I	-	[25]	3895.828	Ce	2	-
3900.865	Yb	50	10	3898.433	Ce	2	-	3895.805	Er	6	1
3900.863	Er	18	1	3898.362	Mn	30	-	3895.784	Gd	25	10
3900.823	Cb	2	2	3898.361	Ru I	12	6	3895.770	Ru	3	-
3900.82	Cs	-	[4]	3898.285	Cb	3	200	3895.662	Mg I	-	15
3900.799	U	2	3	3898.278	V	10	-	3895.66	Se	-	[2]
3900.79	Tm	80	50	3898.273	Ce	80	6	3895.658	Fe I	400	300
3900.734	Pt I	40	3	3898.26	Eu	5 W	-	3895.655	La	10	-
3900.72	Tb	4	-	3898.139	V I	40	-	3895.592	Ir	30	25
3900.680	Al II	-	[200]	3898.120	Mg I	5	8	3895.53	Ho	4	-
3900.665	Mo	2	-	3898.019	V I	10	2	3895.46	Eu	2 W	-
3900.651	Hf II	2	15	3898.014	Ce	5	-	3895.425	Th	20	10
3900.63	A	-	[10]	3898.013	Fe I	80	50	3895.423	Sm	10	2
3900.584	Th	8	3	3897.909	W	12	15	3895.409	Re	10	-
3900.540	Ti II	30	50 h	3897.895	Fe	100	60	3895.376	Nd	10	10
3900.528	Cb	30	10	3897.89	Au I	30	25	3895.376	Tb	3	-
3900.519	Fe I	60	3 d	3897.870	K II	-	[60]	3895.35	Dy	15	3
3900.519	Eu	12 w	-	3897.852	Tb	15	8	3895.272	U	12	20
3900.517	Zr I	100	-	3897.73	Br	-	[3]	3895.26	A II	-	[3]
3900.423	Eu	8 w	2	3897.73	Eu	20 W	-	3895.246	Ti I	70	10
3900.40	Tb	2	-	3897.717	Pr	8	3	3895.232	Gd	20	20
3900.394	Os	50	12	3897.707	U	6	-	3895.230	Fe	2 h	-
3900.39	Dy	3	-	3897.658	Zr I	6	-	3895.177	Os	20	-
3900.327	U	6	12	3897.650	Cr I	40	25	3895.146	Fe	2	-
3900.227	Mo	1	3	3897.638	Nd	20	10	3895.12	Eu	2 W	-
3900.226	Nd	30	30	3897.585	Ti I	6	-	3895.119	Ce I, II	40	6
3900.204	Ce	10	2 h	3897.507	Mo	5	8	3895.093	Sm	3	3
3900.175	V I	50	2 h	3897.447	Fe I	10	5	3895.078	Pr	5	3
3900.169	Eu	12 w	-	3897.432	Ce	6	-	3895.065	Tb	4	-
3900.11	K II	-	[10]	3897.429	La II	3	4	3895.027	Nd	-	5
3900.108	Pr	3	1	3897.39	Tb	4	-	3895.02	P	-	[100]
3900.09	Cs II	-	[4]	3897.348	Gd	4	-	3894.982	Co I	300 R	3
3899.936	Hf	15	6	3897.304	Ti I	8	-	3894.97	Eu	4 W	4 Wh
3899.86	A I	-	[100]	3897.284	Pr	20	8	3894.957	Sc	2 h	1
3899.859	Ce	2	2 h	3897.27	Ho	4	4	3894.943	Pr	15 d	3 d
3899.778	W	-	5	3897.265	U	15	5	3894.923	U	10	-
3899.712	Ti I	15	2	3897.260	I	-	[40]	3894.901	Th	2	1
3899.709	Fe I	500	300	3897.252	Sm II	8	5	3894.82	In II	-	[18]
3899.708	Eu	4	-	3897.25	Tb	4	-	3894.756	U	2	6
3899.64	Ho	-	6	3897.236	Ru	12	6	3894.72	Eu	3 W	-
3899.555	Pr	10	8	3897.23	Eu	10 W	10 W	3894.71	Kr II	-	[60 whi]
3899.54	Tb	15	8	3897.23	Ca	2	3	3894.708	Mn	40	40
3899.54	Lu	-	3 h	3897.128	Ir	5	-	3894.708	Gd	150 W	80
3899.455	Eu	5 w	-	3897.1	bh Sr	8	-	3894.7	bh Ca	4	3
3899.385	Ce	6	2	3897.075	V I	40	2	3894.700	Cb	3	-
3899.333	Mn	12	25	3897.062	U	8	18	3894.671	Ta	-	40 h
3899.270	Ce	2	-	3897.039	Pr	9	3	3894.660	A I	-	[300]
3899.246	Cb	10	15	3896.978	Cs II	-	[7]	3894.659	Ca	-	3
3899.242	K II	-	[10]	3896.971	Sm II	50	50	3894.63	Tb	20	3
3899.19	Tb	200	100	3896.929	W	2	15	3894.627	Nd	20	20
3899.15	Dy	20	-	3896.9	Pb II	-	[2]	3894.6	Pb II	-	[5]
3899.134	V I	12	5 h	3896.852	Mo	5	5	3894.571	Cb	-	5 h
3899.106	Cu I	2 wh	-	3896.843	Pr	12	4	3894.568	Cr	10	-
3899.097	U	5	3	3896.82	Eu	4 W	-	3894.55	Ra II	-	[25]
3899.095	Zr	5	1	3896.804	Yt II	2	5	3894.533	Dy	4	-
3899.038	Fe I	20	8	3896.804	Ce I, II	35	6	3894.416	Th	8	5
3899.036	Er	2	1	3896.794	V I	2	-	3894.352	Ba I	5	-
3899.01	Fe	6	-	3896.779	U	20	25	3894.34	Eu	2	-
3898.944	Ce I	15	3	3896.75	Ho	5	4	3894.281	Sm	8	2 h
3898.840	Pr	15	9	3896.675	Cu II	-	2	3894.245	Ru I	8	2
3898.837	U	6	6	3896.66	F II	-	[6]	3894.201	Pd I	200 W	200 W
3898.833	F II	-	[20]	3896.656	Dy	8	-	3894.17	Eu	9 w	5 wh
3898.794	Th	2	1	3896.622	V	6	1	3894.141	Pr	8	2
3898.782	W	-	6 d	3896.62	Tm	15	1	3894.123	U	30	4
3898.781	Ta	10	5 h	3896.60	Tb	25	15	3894.081	Co I	1000 R	100
3898.78	Eu	20 W	-	3896.534	Zr I	15	-	3894.052	Sm II	15	15
3898.747	Pt I	20	2 h	3896.488	Tb	4	-	3894.042	V I	20	3
3898.734	Tb	4	-	3896.479	Gd	5	5	3894.035	Cr I	60	40
3898.725	F II	-	[3]	3896.45	Eu	2 W	-	3894.034	Cb	15	30
3898.693	U	6	-	3896.43	Ta	5	-	3894.015	Mo	1	3
3898.604	La I	30	5	3896.379	Mo	8	10	3894.012	Fe	8	8
3898.600	Ce II	4	-	3896.333	Mn	12	12	3893.930	W	6	12
3898.58	Ba I	5	-	3896.24	Ho	4	6	3893.917	Re	2	-
3898.557	Cb	5	5	3896.234	Er	30	15	3893.915	Fe I	10	4
3898.557	Zr I	2	-	3896.156	V I, II	50	40	3893.89	Hg I	-	[2 h]

3893.8—3885.9 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3893.837	Zr I	3	—	—	3891.512	Nd	20	15	—	3889.151	Sm II	4	4	—
3893.821	U	10	10	—	3891.48	Eu	3 w	—	—	3889.141	Ca I	8	—	Cw
3893.75	Sb II	—	[6]	Lg	3891.410	Ru	20	3	—	3889.055	H I	—	[60]	m
3893.732	Cb	15	10	—	3891.40	A	—	[15]	Rt	3889.024	Er	9	1	—
3893.703	Nd	12	4	—	3891.398	Re	15	—	—	3889.004	Zr	2 h	2 h	—
3893.70	Tb	5	—	Ed	3891.383	Zr I	100	5	—	3888.997	Ce	12	3	—
3893.635	Ti	6	—	—	3891.34	Eu	4 w	—	—	3888.99	Dy	20	—	m
3893.54	Ho	5	2 h	Kn	3891.300	Cb	50	100	—	3888.95	Ho	40	20	Ex
3893.52	O II	—	[5]	Mh	3891.249	W	9	5	—	3888.934	Gd	6	—	—
3893.473	W	5	6	—	3891.220	V I	8	2	—	3888.890	W	3	4	—
3893.396	Th	15 w	10 w	—	3891.179	Sm II	50	8	—	3888.875	Mo	8	8	—
3893.394	Fe I	100	8	—	3891.119	V	5	—	—	3888.823	Fe	40	15	—
3893.384	Sm	3	1	—	3891.090	U	10	10	—	3888.68	Eu	8 w	5 w	—
3893.38	Eu	2 w	—	—	3891.083	Yt	2 h	3	—	3888.65	Cs I	150	10	Fl
3893.376	Mg I	—	8	Ps	3891.060	Th	10	10	—	3888.646	He I	—	[100]	IMr
3893.35	Tb	15	8	Ed	3891.02	Ho	200	40	Ex	3888.607	U	4	3	—
3893.325	Mo	5	5	—	3890.986	Ce II	12	3	—	3888.52	Br	—	[10]	Bl
3893.318	Fe I	5	4	—	3890.95	Tb	5	—	Ed	3888.517	Fe I	4 w	3 w	S
3893.307	U	—	3	—	3890.940	Nd	20	20	—	3888.40	Dy	6	—	m
3893.303	Co I	15	—	—	3890.884	Gd	15	15	—	3888.388	Ce II	15	4	—
3893.233	Ce	18	1	—	3890.858	Yt	4	4	—	3888.335	Rh I	5	2	—
3893.113	Th	8	5	—	3890.844	Fe	60	30	—	3888.329	V I	10	1	—
3893.11	Eu	2 W	—	—	3890.761	Ce	8	2	—	3888.291	Pr	5	4	—
3893.10	Ho	4	4	Ex	3890.749	Cb	2	3	—	3888.233	Bi I	40	2	—
3893.09	Cs	—	[4]	Bs	3890.741	W	7	6	—	3888.21	Tb	30	—	Ed
3893.070	Co I	10	2	m	3890.714	Ta	2	2	—	3888.206	U	12	6	—
3893.04	F II	—	[3]	Di	3890.706	Mo	5	8	—	3888.178	Mo	10	8	—
3893.032	Ta	4	2	—	3890.619	Er	10	2	—	3888.110	Ce	2	—	—
3892.988	I I	—	[15]	Ke	3890.583	Ba I	3	—	—	3888.093	Er	18	1	—
3892.95	Ho	6	4	Ex	3890.580	Nd	30	25	—	3888.080	V I	15	4	—
3892.913	Cu II	1	2	Sh	3890.527	Ce II	4	—	—	3888.024	Ti I	15	—	—
3892.894	Fe	5	2	—	3890.52	Tm	40	10	Me	3887.960	Mo	3	4	—
3892.893	U	8	—	—	3890.499	Ta	2	10	Ro	3887.952	Re	20	—	—
3892.87	Dy	8	2	m	3890.46	As II	—	—	—	3887.945	W	—	10	—
3892.859	V I	60	35	—	3890.455	Mo	2	3	—	3887.935	Bi I	5	2	Om
3892.81	Eu	6 w	—	—	3890.441	Ce	2	—	—	3887.88	Tb	10	—	Kn
3892.773	Ru	10	4	—	3890.421	Gd	5	—	—	3887.866	Nd	25	20	—
3892.75	Gd	5 h	—	Kn	3890.42	Ho	5	—	Kn	3887.81	Eu	5 w	—	—
3892.722	W	10	12 l	—	3890.420	W	10	8	—	3887.776	Yt	3	3	—
3892.70	Ho	2	2 h	Ex	3890.390	Fe I	4	2	—	3887.772	Ru I	15	8	—
3892.692	Er	25	2	—	3890.364	U	35	30	—	3887.745	Gd	5	—	—
3892.684	U	20	30	—	3890.318	Zr I	150	6	—	3887.700	U	20	10	—
3892.678	Sm	—	3 h	—	3890.241	Mg I	3	8	Ps	3887.672	Mo	3	3	—
3892.662	Ba	5 h	—	—	3890.237	Fe	15	—	—	3887.67	Tb	25	3	Ed
3892.615	Mn	20	20	—	3890.221	Nd	12	8	—	3887.54	Dy	22	2	—
3892.523	Pr	15	4	—	3890.197	Ru I	30	8	—	3887.54	Kr II	—	[5 whl]	Me
3892.475	V	5	—	—	3890.184	V I	100	30	—	3887.49	Tb	4	—	Ed
3892.472	Hf	5	1 h	—	3890.170	Pr	8	2	—	3887.482	Re	20	—	—
3892.47	La II	—	3 h	Me	3890.074	Sm II	10	10	—	3887.447	U	20	—	—
3892.422	Er	2	—	—	3890.073	Cu II	—	3	Sh	3887.381	Ir	3	—	Ab
3892.413	U	10	12	—	3890.007	U	1	3	—	3887.365	Ti I	5	—	—
3892.410	Fe I	2	—	—	3889.990	Ce	50	8	—	3887.354	Tm	80	—	Me
3892.408	Yt I	3	—	—	3889.969	Pr	5	3	—	3887.318	Cb	—	5	—
3892.330	W	8	7	—	3889.957	Re	25	—	—	3887.315	Yb	6	40	—
3892.321	S II	—	[35]	Hn	3889.954	Ti I	25	5	—	3887.29	Tb	2	—	Kn
3892.32	Ce	2	—	—	3889.953	Mo	2	4	—	3887.198	U	—	3	—
3892.311	Th	10	8	—	3889.929	Nd	30	20	—	3887.177	Gd	10	10	—
3892.292	Mo	5	15	—	3889.923	Fe	2	—	—	3887.160	Er	2	1	—
3892.265	Zr	2	—	—	3889.85	Tb	10	3	Ed	3887.15	Ti II	—	[30]	El
3892.209	Ru I	50	40	—	3889.799	Er	15	1	—	3887.104	Sm	8	—	—
3892.206	Cs	—	[4]	Sv	3889.78	In II	—	[100]	Ps	3887.051	Fe I	3 w	2 w	S
3892.125	Co I	20	—	—	3889.671	Ni I	30	10 h	—	3887.050	Ir	8	—	—
3892.118	Mg	3	12	—	3889.664	Nd	30	25	—	3886.921	Th	8	1	—
3892.112	U	8	3	—	3889.634	Cb	3	5	—	3886.84	K II	—	[5]	Bn
3892.065	Nd	20	20	—	3889.577	Ir	2	3	—	3886.83	Tb	20	8	Ed
3892.063	Ce	3	—	—	3889.549	Ce	3	—	—	3886.822	Mo	30	30	—
3892.05	La II	—	3 h	Me	3889.51	Eu	10 W	5 W	—	3886.789	Cr I	125	125	—
3892.030	Zr I	10	—	—	3889.476	Ce II	4	—	—	3886.750	Os	30	8	—
3891.982	Dy	12	—	Kn	3889.47	Au I	3	8	—	3886.70	Tb	3	—	Kn
3891.97	A	—	[25]	Rt	3889.457	Ta	—	40 W	—	3886.672	Cb	2 h	5 wh	—
3891.938	Sm	4	—	—	3889.450	Mn	25	50	—	3886.587	V I	25	15	—
3891.934	Cr I	40	25	—	3889.446	Zr	2	—	—	3886.496	Ce II	6 l	3 h	—
3891.929	Fe	100	70	—	3889.419	Pr	10	6	—	3886.451	W	8	10	—
3891.877	Mo	2	20 d	—	3889.415	U	1	5	—	3886.45	U	2	4	—
3891.85	Dy	6	4	Kn	3889.369	W	—	5	—	3886.4	Ho	6	—	Kn
3891.822	U	18	1	—	3889.330	Pr	150	70	—	3886.390	Ir	6	—	Ab
3891.785	Ba II	18	25	—	3889.328	Hf	5	1	—	3886.368	La II	600	200	—
3891.774	Ce	6	—	—	3889.316	Ba	10	2	m	3886.284	Fe I	400	400	S
3891.763	Th	5	—	—	3889.304	Ce	6	1	—	3886.200	V I	4	2	Me
3891.76	Tb	2	3	Ed	3889.285	U	12	—	—	3886.072	Cb	10	10	—
3891.704	Pr	10	4	—	3889.285	Mo	2	3	—	3886.049	Nd	10	10	—
3891.682	U	12	—	—	3889.235	V I	12	2	—	3886.038	Sm	5	—	—
3891.680	Co I	5	2	—	3889.232	Hf	4	1 h	—	3886.01	Tb	3	—	Ed
3891.63	Br II	—	[25]	Bl	3889.218	Nd	10	15	—	3885.997	U	2	—	—
3891.55	Si	—	3	Sy	3889.216	Sm	5	7	—	3885.98	Eu	3 w	—	—

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
3885.902	Sm II	5	5	-	3883.203	V	1	2	-	3879.925	Co	2	-	-
3885.770	V I	20	1	-	3883.137	Cb	30	30	-	3879.715	U	20	3	-
3885.769	Ce	4	1	-	3883.13	Tm	100	10	Me	3879.661	V I	50	5	-
3885.766	Th	8	5	-	3883.12	O II	-	[7]	Mn	3879.66	Er	20 d	2 w	-
3885.749	Os	20	8	-	3883.103	O	3	3	-	3879.650	Fe	2 wh	-	-
3885.682	Cb	15	30	-	3883.06	Dy	5	-	-	3879.642	Cb	2	2	-
3885.678	U	5	1	-	3882.950	Mo	5	15	-	3879.605	Ce	4	3	-
3885.514	Fe I	100	60	-	3882.892	Ti I	35	10	-	3879.60	C II	-	2	En
3885.508	Mo	5	5	-	3882.868	Er	8	2	-	3879.59	Ho	-	6	Ex
3885.45	Xe	-	[3 whl]	Hu	3882.857	Sm II	5	5	-	3879.548	U	18	-	-
3885.441	Cb	50	100	-	3882.679	Cb	2	3	-	3879.543	Nd	30	5	-
3885.425	Zr I	25	6	-	3882.565	Ce	2	2	-	3879.522	Mo	10	8	-
3885.418	Ir I	8	-	-	3882.519	Ir	2	-	-	3879.436	Ta	5	2	-
3885.304	Ca	5	3	-	3882.503	Sm	25	10	-	3879.43	S	-	[3]	Bl
3885.30	Eu	3 w	4 wh	-	3882.480	Fe	2	-	-	3879.387	Cu II	1 h	2 h	Sh
3885.291	Er	10	-	-	3882.446	Ce	5	-	-	3879.361	Ti	10	4	-
3885.288	Co I	70	4	-	3882.43	O II	-	[10]	Mh	3879.346	Cb	5	300	-
3885.284	Sm II	50	50	-	3882.361	U	18	18	-	3879.311	Ce II	5	3 W	Ab
3885.282	U	3	-	-	3882.328	Ti I	20	7	-	3879.274	Fe	2 W	2 W	-
3885.236	Ce	5	-	-	3882.315	Pr	2	-	-	3879.27	Er	15 wd	1 w	-
3885.218	Cr I	40	50	-	3882.306	Mo	-	4	-	3879.232	V I	35	3	-
3885.202	Ta	15	10	-	3882.194	O II	-	[35]	Fl	3879.222	Cr I	60	15	-
3885.190	Pr	100 w	40 w	-	3882.148	Ti I	25	8	-	3879.214	Pr	100	80	-
3885.17	P	-	[150 I]	Gu	3882.006	Ru I	12	-	-	3879.2	bh Ca	4	-	L
3885.153	Fe I	6	3	-	3882.001	Dy	25	-	-	3879.196	W	5	6	-
3885.150	Th	5	5	-	3881.980	Fe	2	-	-	3879.074	Ce	5	1	-
3885.12	Tb	8	-	Kn	3881.902	Zr II	1	3 h	-	3879.051	Zr I	10	1	-
3885.09	La II	4	4	Me	3881.890	Re I	25	-	-	3879.05	Dy	25	2	m
3885.084	Cr I	15	10	-	3881.878	U	6	-	-	3879.020	Mo	5	5	-
3885.00	Xe II	-	[10]	Hu	3881.876	Pr	4	-	-	3878.992	W	6	7	-
3884.992	Ce	3	-	-	3881.874	Co I	300 R	30	-	3878.969	Cb	5	3	-
3884.939	U	2	4	-	3881.874	Ce II	6	4	-	3878.967	U	3	3	-
3884.843	V II	4	70	-	3881.858	Os	125	20	-	3878.877	Ir I	2	-	-
3884.842	Yt	3	2 h	-	3881.856	Cr I	50	6	-	3878.852	Re	10	-	-
3884.829	Th	20	15	-	3881.787	Sm	20	-	Kn	3878.84	Er	10	1	-
3884.765	Ce	8	-	-	3881.75	Tb	4	-	Ed	3878.822	Cb	5	5	-
3884.76	Eu	50 W	5 Wh	-	3881.707	Cu I	5	-	-	3878.766	Ce	3	2	-
3884.745	Ce	3	1	-	3881.665	Ce II	5	3	-	3878.753	Ru	3	-	-
3884.741	Nd	8	4	-	3881.61	Ho	-	6	Ex	3878.737	Co I	70 r	-	-
3884.741	Pr	4	1	-	3881.598	Mo	-	4	-	3878.736	Fe	10	10	-
3884.71	Gd	10 h	10	Kn	3881.497	Ce	2	-	-	3878.712	V II	35	100	-
3884.681	U	8 h	20	-	3881.461	U	30	20	-	3878.676	Fe I	30	-	-
3884.676	Ru	20	6	-	3881.399	Ti I	12	3	-	3878.62	K II	-	[15]	Bn
3884.667	Fe I	1	-	-	3881.390	W	20	20	-	3878.582	Nd	30	2	Kn
3884.615	Co I	100	-	-	3881.387	Sm II	10	10	-	3878.575	Fe I	300 R	300	S
3884.585	Pr	2	1	-	3881.31	Eu	4 W	-	-	3878.574	Ir	4	-	-
3884.562	Ce	3	-	-	3881.29	Tb	8	-	Ed	3878.573	Mg I	10	-	-
3884.531	Th	10	8	-	3881.214	Cr I	60	18	-	3878.572	Os	50	12	-
3884.523	Cu II	-	2	Sh	3881.141	W	5	4	-	3878.511	W	4	5	-
3884.465	V I	30	1	-	3881.111	U	6 h	3	-	3878.372	Ce I, II	15	12	-
3884.44	Eu	8 W	5 W	-	3881.054	V	2	5	-	3878.307	Pr	-	4	-
3884.37	Tb	8	-	Ed	3881.015	Fe	2 h	1 h	-	3878.290	Yt II	15	15	-
3884.363	Sm	5	2	-	3881.006	Co I	3	-	-	3878.22	C II	-	2	En
3884.362	Fe	80	35	-	3880.989	Sm	10	8	-	3878.21	Tb	10	-	Ed
3884.203	Ce	8	3	-	3880.839	Co	8	-	-	3878.183	He I	-	[3]	Pe
3884.129	Cu II	-	5	-	3880.818	Hf II	20	30	-	3878.091	U	8	4	-
3884.109	Ti I	10	-	-	3880.806	Ru I	5	-	-	3878.021	Fe I	400	300	S
3884.076	Nd	6	8	-	3880.780	Fe	3 h	2 h	-	3877.984	Ce	8	8	-
3884.05	I II	-	[2]	Mu	3880.779	Nd	-	20	-	3877.94	Dy	4	2	m
3884.039	Pr	5	4 h	-	3880.768	Os	10	12	-	3877.93	Er	6	1	-
3884.016	Ru	20	6	-	3880.757	W	7	6	-	3877.929	Pr	-	4	-
3883.987	Sm	2	2	-	3880.755	Sm II	40	30	-	3877.88	Eu	4 wl	-	-
3883.978	Ce II	6	-	-	3880.728	Ru	5	-	-	3877.595	Zr I	10	1	-
3883.887	V I	40	5	-	3880.674	U	2	3	-	3877.592	Ti I	3	-	-
3883.829	W	7	8	-	3880.66	Er	25 wd	6 wd	-	3877.56	Tb	6	-	Ed
3883.804	Sm II	2	3	-	3880.65	Ho	-	6	Ex	3877.559	Ce	3 s	-	-
3883.80	Cl II	-	[12]	Ks	3880.59	C II	-	2	En	3877.558	Cb	50	20	-
3883.767	Hf II	3	10	-	3880.5	Pb II	-	[2]	Ea	3877.530	Ru	3	5 h	-
3883.757	Nd	6	20	-	3880.466	Pr	80	60	-	3877.52	Er	15 d	1	-
3883.698	Mo	-	20	-	3880.406	Ce	2	3	-	3877.510	Fe	2	-	-
3883.660	Cr I	30	20	-	3880.399	Cr	12	-	-	3877.473	Sm	50	8	-
3883.64	Eu	10 W	10 W	-	3880.376	Nd	25	4	-	3877.47	Ag	2	1	-
3883.636	U	12	-	-	3880.35	Tb	4	-	-	3877.452	U	5	4 h	-
3883.566	Ce II	4 s	1	-	3880.34	A	-	[5]	Rt	3877.345	Rh I	20	5	-
3883.462	Mo	4	2	-	3880.260	V I	15	4	-	3877.307	Os	20	10	-
3883.43	Tm	150	30	Me	3880.225	Fe	2	-	-	3877.281	W	-	12	-
3883.4	bh C	-	3	L	3880.21	Eu	2 W	-	-	3877.28	Se II	-	[50]	Bl
3883.364	Ir	4	-	-	3880.200	Au II	-	20	-	3877.27	Eu	5 w	-	Kn
3883.358	K II	-	[10]	Dm	3880.079	W	8	8	-	3877.225	Pr	125 w	80 w	-
3883.350	Au	-	20	-	3880.07	Kr II	-	[2 whl]	Me	3877.192	I II	-	[5]	Ke
3883.342	W	3 wd	5 l	-	3880.043	Er	20 wd	2 W	-	3877.180	Sm	30	5	-
3883.340	Zn I	50	2 h	Hx	3880.029	U	6 wh	-	-	3877.122	Ce	4	-	-
3883.334	U	10	18	-	3879.99	Tb	4	-	Ed	3877.104	Hf II	4	30	-
3883.292	Cr I	60	80	-	3879.984	Mo	4	4	-	3876.974	Ce II	15	3 s	-
3883.289	Fe	70	40	-	3879.968	Ce	4	3	-	3876.965	Cb	5	5	-

3876.9—3868.5 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3876.95	Er	15 d	1	w	-	3874.406	W	12	12	-	-	3871.631	La II	200	15	-	-
3876.95	U	3	2	-	-	3874.366	Sm	5 h	4	-	-	3871.62	C II	-	6	-	En
3876.893	Fe I	60	-	-	-	3874.357	U	10	-	-	-	3871.583	W	-	6	-	-
3876.89	Br	-	-	[3]	Bl	3874.345	V I	10	2	-	-	3871.57	U	2	3 h	-	-
3876.835	Co I	300 w	40	-	-	3874.333	Ce	4	-	-	-	3871.546	Ir I	2	-	-	-
3876.819	Yt	5	3	-	-	3874.285	Mo	1	6	-	-	3871.446	Mo	-	50	-	-
3876.768	Os I	300	50	-	-	3874.2	bh Ca	4	-	-	L	3871.4	bh C	-	-	-	L
3876.739	V	25	2	-	-	3874.18	Tb	200	200	-	Ed	3871.400	Ce	8	15	-	-
3876.728	Nd	3	-	-	-	3874.154	Mo	5	6	-	-	3871.39	B	-	20 h	-	Sy
3876.69	Lu	15	-	-	Me	3874.142	Ti	12	4	-	-	3871.390	Zr I	10	10	-	-
3876.671	Fe I	1	-	-	-	3874.134	Ce	4	4	-	-	3871.381	U	3 h	20 h	-	-
3876.67	Tb	8	-	-	Ed	3874.125	Er	18 d	1 w	-	-	3871.35	Au	25	20	-	-
3876.670	C II	-	40	-	Fl	3874.11	Ho	2	8	-	Ex	3871.215	Ru I	10	1 h	-	-
3876.648	Ru I	12	1	-	-	3874.07	O II	-	[5]	Mh	-	3871.21	Br II	-	[12]	-	Bl
3876.63	Lu	50	100	-	Kn	3874.051	Fe I	1	-	-	-	3871.186	Cb	15	20	-	-
3876.593	U	6	4	-	-	3874.042	U	15	15	-	-	3871.078	V I	60	35	-	-
3876.562	Ta	10	5	-	-	3873.995	Dy	100	-	-	-	3871.042	U	30	1	-	-
3876.55	Lu	3	-	-	Kn	3873.955	Co I	400 R	80	-	-	3870.885	Sm II	5	4	-	-
3876.47	Tb	3	-	-	Ed	3873.948	Fe	1	-	-	-	3870.88	Lu	5	-	-	Me
3876.45	Er	15 d	1	-	-	3873.923	Th	10	5	-	-	3870.87	Eu	2 w	-	-	-
3876.409	C II	-	60	-	Fl	3873.78	Tb	8	3	-	Ed	3870.866	Ce	6	2	-	-
3876.39	Cs I	300	-	-	Fl	3873.763	Fe I	125	80	-	S	3870.821	W	5	6	-	-
3876.378	Fe	2	-	-	-	3873.747	K II	-	[20]	Dm	-	3870.810	Fe	2 h	-	-	-
3876.370	Ce	2	-	-	-	3873.724	Os	20	20	-	-	3870.725	Pr	4	3	-	-
3876.188	C II	-	125	-	Fl	3873.718	Sm	12	3	-	-	3870.7	Na	-	[3]	-	Nm
3876.183	Pr	80	30	-	-	3873.635	V I	35	12	-	-	3870.687	Ta	-	5 h	-	-
3876.140	Ce	6	1	-	-	3873.564	Pd I	5	-	-	-	3870.661	Cb	2	3	-	-
3876.134	U	15	2	-	-	3873.54	Eu	8 w	5 w	-	-	3870.64	Si	-	3	-	Sy
3876.13	Tb	8	-	-	Ed	3873.53	Er	5 d	1 w	-	-	3870.593	Mo	5	5	-	-
3876.086	V I	50	30	-	-	3873.525	Ru I	30	45	-	-	3870.576	V I	35	10	-	-
3876.082	Ru	20	3	-	-	3873.471	Sm	10	3	-	-	3870.558	U	8	8	-	-
3876.07	A I	-	[10]	-	Ms	3873.277	Cb	2	3	-	-	3870.530	Co I	70	8	-	-
3876.051	C II	-	40	-	Fl	3873.259	Mo	-	10	-	-	3870.506	Ca I	15	-	-	Cw
3876.045	Fe I	40	15	-	-	3873.255	Ce	4	-	-	-	3870.436	Mo	5	6	-	-
3875.95	Eu	3 W	-	-	-	3873.213	Ti I	40	7	-	-	3870.355	Er	10	1	-	-
3875.902	V I	40	3	-	-	3873.200	Sm II	20	3	-	-	3870.267	Cr I	80 W	3 W	-	-
3875.902	Ce	5	2 s	-	-	3873.196	Mn	12	12	-	-	3870.164	Cs	-	[4]	-	Sv
3875.866	Nd	30	4	-	-	3873.153	Ir I	25	10	-	-	3870.131	Ti	12	5	-	-
3875.823	I	-	[15]	-	Ke	3873.115	Co I	500 R	80	-	-	3870.131	Ir I	8	1	-	-
3875.807	Ca I	50	-	-	Cw	3873.088	U	12	2	-	-	3870.057	Al II	-	[2]	-	Sy
3875.80	O II	-	[12]	-	Mh	3873.032	Ce	2	-	-	-	3870.05	U	6	5	-	-
3875.763	Cb	10	50	-	-	3873.0	Tb	10	-	-	Ed	3870.011	Rh I	15	3	-	-
3875.738	Nd	15	6	-	-	3872.943	Ir	7	-	-	-	3869.922	Re I	40	-	-	-
3875.72	Pt	-	2 h	-	-	3872.924	Fe I	3	1	-	-	3869.873	Ir I	2 h	-	-	-
3875.697	Cb	3 h	-	-	Me	3872.9	bh Ca	4	-	-	L	3869.870	Dy	100	-	-	-
3875.682	W	12	9	-	-	3872.866	U	2	1	-	-	3869.81	Ti II	-	[6]	-	Sx
3875.648	Th	3	-	-	-	3872.863	Yb	12	5	-	-	3869.75	U	5	1	-	-
3875.541	Sm II	5	10	-	-	3872.830	W	12	10	-	-	3869.75	Tb	15	15	-	Ed
3875.44	Kr II	-	[150 whl]	-	Me	3872.748	V I	10 h	2 h	-	-	3869.73	Eu	20 wh	-	-	-
3875.426	V I	10	2	-	-	3872.738	Ta	2	2	-	-	3869.639	Th	5	3	-	-
3875.418	Cb	5	10	-	-	3872.73	Eu	6 w	-	-	-	3869.63	Xe II	-	[10]	-	Hu
3875.383	Fe	2 h	1 h	-	-	3872.729	Ce	8	15	-	-	3869.617	Au II	-	10	-	-
3875.379	Th	10	5	-	-	3872.728	Th	30	20	-	-	3869.610	Ti I	10	4	-	-
3875.35	Eu	10 W	-	-	-	3872.72	W	-	4	-	-	3869.566	Ce	3	1	-	-
3875.338	U	12	6	-	-	3872.718	Ru	4	6	-	-	3869.564	Fe I	100	80	-	-
3875.314	Pr	-	5	-	-	3872.64	Pb	-	2	-	Sx	3869.563	Fe	4	-	-	-
3875.311	Gd	4	-	-	-	3872.560	Ca I	30	-	-	-	3869.51	W	-	5	-	-
3875.261	Ce	4	2	-	-	3872.55	Hf II	6	20	-	m	3869.468	Ir I	15	2	-	-
3875.26	A	-	[25]	-	Rt	3872.510	Ce	2 h	-	-	-	3869.430	Dy	25	-	-	-
3875.256	Ti I	35 h	8	-	-	3872.504	Fe I	300	300	-	S	3869.363	Th	10	8	-	-
3875.248	Re I	40	-	-	-	3872.392	Rh I	50	3	-	-	3869.323	Ce	2	3	-	-
3875.21	Tb	20	8	-	Ed	3872.372	Ru	4	8	-	-	3869.310	W	3	5	-	-
3875.21	Ta	5 h	2 h	-	Ks	3872.333	U	2	1	-	-	3869.294	Ti I	15	8	-	-
3875.209	Cr I	2 h	1 h	-	-	3872.308	Yt II	2 h	3 h	-	-	3869.19	Ti II	-	[18]	-	Sx
3875.198	W	-	6	-	-	3872.223	Sm	9	3	-	-	3869.16	Eu	6 W	-	-	-
3875.174	Sm	50	10	-	-	3872.173	Zr I	6	6	-	-	3869.14	Hg II	-	[10]	-	Nu
3875.157	U	8	-	-	-	3872.15	Er	3	2	-	m	3869.10	Dy	5	2	-	m
3875.15	Dy	3	-	-	m	3872.15	A	-	[10]	Rt	-	3869.10	N	-	[15]	-	Du
3875.075	V I	70 r	50	-	-	3872.14	Ho	6	8	-	Ex	3869.080	Mo	25	30	-	-
3875.072	Au	3	-	-	-	3872.139	Ce II	3	3	-	-	3869.045	Nd	20	4	-	-
3875.036	Ce II	6	-	-	-	3872.125	Mn	10	10	-	-	3868.90	Tb	4	8	-	Ed
3874.977	Hg	-	[30 h]	-	St	3872.117	Dy	300	150	-	-	3868.84	C II	-	2	-	En
3874.866	Th	5	3	-	-	3872.10	Tb	2	8	-	Ed	3868.826	Cb	4	4	-	-
3874.76	Pr	2	5	-	-	3872.056	Mn	10	-	-	-	3868.814	Dy	60	-	-	-
3874.73	Tb	5	-	-	Ed	3872.050	Zr	8	6	-	-	3868.813	U	2	4	-	-
3874.70	Ho	6	6	-	Ex	3871.882	Mo	-	25	-	-	3868.808	Mo	3	7	-	-
3874.692	Fe	3 h	-	-	-	3871.878	U	8	12	-	-	3868.784	Pr	2	5	-	-
3874.677	Ce	6	2	-	-	3871.851	Ir I	8	2	-	-	3868.708	U	8	-	-	-
3874.672	Au	5	15	-	-	3871.819	He I	-	[5]	Ps	-	3868.686	Os	30	10	-	-
3874.65	Pb	-	2	-	Sx	3871.809	Ce	8	-	-	-	3868.644	Ce	3	2	-	-
3874.61	Lu	4	-	-	Me	3871.782	Sm II	6	25	-	-	3868.62	Cl II	-	[40]	-	Ks
3874.533	Cr I	70	12	-	-	3871.750	Fe I	100	60	-	-	3868.620	Fe	3	-	-	-
3874.474	Gd	3 h	-	-	-	3871.688	Ru	8	3	-	-	3868.59	Ti II	-	[6]	-	Sx
3874.460	U	10	2	-	-	3871.643	Ce	-	3	-	-	3868.573	Cb	3	5	-	-
3874.45	Pr	20	4	-	-	3871.635	Dy	20	-	-	-	3868.570	W	5	5	-	-

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
3868.53	A	-	50	Rt	3865.29	Eu	2	2	Kn	3862.66	Dy	7	1	m
3868.502	Ce II	3	-	-	3865.240	Sm II	10	-	-	3862.646	Ru	2	60	-
3868.461	Dy	50	-	-	3865.153	Mo	-	20	-	3862.548	Cr	25	20	-
3868.456	W	3	3	-	3865.148	U	5 h	8	-	3862.51	Si	-	7	Sy
3868.415	U	6	6	-	3865.147	Pr	-	2	-	3862.490	V	10	-	-
3868.412	Pt	-	2	-	3865.146	Be I	5	-	-	3862.487	Nd	20	12	-
3868.410	Ca	-	2	-	3865.105	Ce	2	-	-	3862.477	Sm	10	3	-
3868.403	Ti I	50	8	-	3865.045	Os	10	5	-	3862.465	Ce	15	10	-
3868.35	La	-	3 h	Me	3865.039	Cb	10 d	-	-	3862.411	Er	15	3	-
3868.266	Cr	8	5	-	3865.036	Th	8	3	-	3862.376	Th	3	2	-
3868.241	Fe I	3	1	-	3865.024	Cb	-	200 h	-	3862.28	U	3	2	-
3868.138	Ce II	6	2	-	3864.896	Nd	4	-	Kn	3862.236	Sm II	3	9	-
3868.058	Ce	2	-	-	3864.869	Ce	2	-	-	3862.223	V I	8	20	-
3867.990	U	4	-	-	3864.862	V I	100 r	50 r	-	3862.134	Ce	2	-	-
3867.975	W	30	35	-	3864.857	Ru I	5	-	-	3862.116	Re	10	-	-
3867.923	Fe I	30	8	-	3864.81	Er	7	1	-	3862.051	Sm II	4	9	-
3867.917	Cb	30	20	-	3864.78	Eu	2 W	-	-	3862.05	U	8	1	-
3867.84	Dy	6	-	m	3864.767	Fe	2 h	-	-	3861.959	Eu	2	1 h	-
3867.839	Ru I	60	35	-	3864.764	Re	3	-	-	3861.946	Zr	4	2	-
3867.744	Ti I	8	4	-	3864.75	Hf II	2	20	Me	3861.945	Ir I	15	10	-
3867.673	Mo	3	4	-	3864.722	U	4	4	-	3861.928	Ce	3	1	-
3867.631	He I	-	[4]	Ps	3864.703	Ti	4	-	-	3861.91	Ba	3	-	m
3867.623	Sm	10	8	-	3864.66	O II	-	[5]	Mh	3861.88	Cl II	-	[20]	Ks
3867.619	Gd	10	-	-	3864.60	Cl II	-	[15]	Ks	3861.788	Sm	10	6	-
3867.604	Ce	5	6	-	3864.534	Pr	2	4	-	3861.746	Cu I	50	2	-
3867.602	V I	70	35	-	3864.497	Ti	15	6	-	3861.736	Ti	10	3	-
3867.60	Se	-	[50]	Bt	3864.488	La II	100	150	-	3861.730	U	8	6	-
3867.56	S	-	[150]	Ms	3864.478	U	8	10	-	3861.7	bh C	-	-	L
3867.55	Pr	20	2	m	3864.464	Ce	2	3	-	3861.68	Ho	40	20	Ex
3867.53	Rn	-	[8]	Wa	3864.42	O II	-	[18]	Mh	3861.608	V I	10 h	3 h	Mo
3867.515	U	10	-	-	3864.367	Cs	-	[4]	Sv	3861.60	Fe	3	2	-
3867.477	He I	-	[15]	Ps	3864.358	Cb	3	5	-	3861.592	Sm II	15	8	-
3867.415	W	4	3	-	3864.336	W	12	10	-	3861.580	Ce	3 h	4 h	-
3867.346	V I	15	3	-	3864.335	Zr I	50	20	-	3861.489	Cs	-	[4]	Sv
3867.337	Hf II	3	12	-	3864.306	Fe	2	-	-	3861.426	Ru I	5	-	-
3867.219	Fe I	150	100	S	3864.305	U	8	10	-	3861.412	K II	-	[10]	Dm
3867.18	U	6	-	-	3864.300	V I	30	-	Me	3861.342	Fe	80	50	-
3867.177	Ru	4	-	-	3864.26	A I	-	[10]	Ms	3861.34	Cl II	-	[50]	Ks
3867.110	Ce	2	-	-	3864.249	Cs	-	[6]	Sv	3861.318	Ir	3	2	-
3867.1	Sr I	2 h	-	Sd	3864.2	Bi	-	150 h	Om	3861.313	Pr	15	5	-
3866.984	Pr	3	3	-	3864.121	Cu II	-	2 wh	Sh	3861.288	Mo	-	4	-
3866.981	Gd	10	-	-	3864.12	Br	-	[2]	Ks	3861.240	W	8	8	-
3866.830	Co I	2	2	-	3864.110	Mo I	1000 R	500 R	-	3861.2	Rb	-	[2]	Dr
3866.819	Ce	12	6	-	3864.10	Eu	7 w	10 w	-	3861.2	Sn	-	7	Ar
3866.818	Pr	2	4	-	3864.059	Pr	3	5	-	3861.183	Sm II	15	2	-
3866.796	Nd	15	2	-	3864.051	Sm	10	2	-	3861.18	Eu	30 w	30 w	-
3866.787	Mo	-	10	-	3864.04	Eu	2 w	-	Kn	3861.165	Co I	300 R	15	-
3866.736	V II	5	50	-	3863.9	Bi II	-	[100]	MI	3861.123	U	5	-	-
3866.691	Mo	5	3	-	3863.874	Zr I	20	6	-	3861.084	Ti	10 h	3	-
3866.592	Dy	25	-	-	3863.866	V I, II	25	15	-	3861.08	Hg	-	[10 h]	Wd
3866.546	Cr	-	3	-	3863.78	Cb	2	-	Me	3861.077	Ta	3 h	1	-
3866.54	Tb	6	-	Ed	3863.750	Re I	15	-	-	3861.062	W	10	10	-
3866.524	Nd	10	2	-	3863.746	Ce II	3	-	-	3861.059	Sm II	15 d	4	-
3866.480	Os	10	5	-	3863.742	Fe I	60	30	-	3860.993	Ce	2	2	-
3866.47	Ta	4	-	Ks	3863.71	Br	-	[3]	Bi	3860.99	Cl II	-	[100]	Ks
3866.443	Ti I	40 h	10	-	3863.655	Eu	3	-	-	3860.942	Nd	4	4	-
3866.28	A I	-	[5]	Ms	3863.607	Co I	30	-	-	3860.915	Fe	1	2	Do
3866.21	Eu	5 W	6 W	-	3863.595	Ce	2	1	-	3860.910	Hf	6	6	-
3866.160	Al II	-	[5]	Sy	3863.49	O II	-	[5]	Mh	3860.857	Cb	5	10	-
3866.046	W	9	4	-	3863.470	W	8	7	-	3860.857	Re I	3	-	-
3866.03	Be I	15	-	Ps	3863.46	Yb	1	5	Me	3860.83	Cl II	-	[150]	Ks
3866.028	Ti I	12	5	-	3863.46	Er	5	3	-	3860.796	Rb II	-	[5]	Rr
3865.987	Pr	-	2	-	3863.413	Fe II	1 h	1 h	-	3860.73	In II	-	[5]	Ps
3865.985	Nd	35	30	-	3863.409	Nd	20	20	-	3860.723	Ru I	20	4	-
3865.976	Ir I	3	-	-	3863.407	Sm	15 d	8	-	3860.72	Eu	5 d	6	-
3865.923	U	20	25	-	3863.404	V I	2	1	-	3860.64	S II	-	[15]	Hn
3865.805	Zr	2	-	-	3863.403	U	5	20	-	3860.630	U	1	15 h	-
3865.803	W	-	8	-	3863.391	Th	20	20	Fd	3860.628	V	20	-	-
3865.743	Ru	4	4	-	3863.384	Cb	15	10	-	3860.627	Zr	5	-	-
3865.74	Be I	2	-	Ps	3863.33	Zr I	2	-	Ks	3860.626	Ce	8	15	-
3865.688	Sm II	5	5	-	3863.327	Nd	10	4	-	3860.619	Sm	25	10	-
3865.660	Mn	12	12	-	3863.20	Dy	5	-	m	3860.460	Cu I	30	7	-
3865.639	Ir I	25	20	-	3863.153	Re	10	2	-	3860.401	Ce	6	3	-
3865.601	Cr	5	3	-	3863.11	La II	2	2	Me	3860.31	La II	-	2	Ma
3865.56	Eu	30 W	-	-	3863.08	Er	3	1	-	3860.280	Sm II	4	5	-
3865.526	Fe I	600	400	S	3863.08	U	10	1	-	3860.178	Ce	2	4	-
3865.521	Be I	10	-	-	3863.072	Ni I	4	5	-	3860.15	S II	-	[8]	Hn
3865.469	Os I	125	200	-	3863.065	Gd	8	10	-	3860.144	Sm	5	1	-
3865.46	Sr I	50	-	Fl	3863.052	Cb	3	20	-	3859.983	W	15	30	-
3865.458	Pr	200 r	125 r	-	3862.946	Ce	4	2	-	3859.942	Ce	3	5	-
3865.45	Dy	10	2	m	3862.94	Eu	5 wh	-	-	3859.913	Fe I	1000 r	600	S
3865.43	Be I	30	-	Ps	3862.931	Cb	10	5	-	3859.832	Th	5	10	-
3865.403	Ru	10	4	-	3862.826	Ti I	30 h	4	-	3859.798	Ta	10	2	-
3865.392	Ce	5	2	-	3862.791	Ce	4	2	-	3859.792	Ce	3	-	-
3865.320	W	7	8	-	3862.762	Cu I	10	-	-	3859.712	Ru	6	15	-

3859.6—3850.7 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3859.675	Ca	6	5 h	-	3856.072	Ir I	25	4	Ab	3853.463	Fe I	7	3	-
3859.670	Nd	25	25	-	3856.07	N II	-	[10]	Fl	3853.439	Os	100	15	-
3859.580	U	20	30	-	3856.025	Rh	6	4	-	3853.382	Os	10	20	-
3859.52	Eu	4 d	-	Kn	3856.024	Ca	-	2 h	-	3853.379	In II	-	12	-
3859.422	Nd	10	12	-	3855.972	Mo	5	5	-	3853.370	U	4	8	-
3859.416	Pr	3	3	-	3855.935	Re	20	-	-	3853.29	Lu	10	-	Me
3859.37	Au II	3	-	-	3855.894	Sm II	5	15	-	3853.290	Sm	-	5	-
3859.341	V I	20	8	-	3855.884	Pr	2	4	-	3853.28	Se	-	[4]	Bl
3859.33	Al II	-	[10]	Sy	3855.872	Ce	3	2	-	3853.216	W	4	3	-
3859.294	W	10	12	-	3855.862	Fe	4	2	-	3853.215	Er	5	1	-
3859.22	Eu	2 wh	-	-	3855.841	V I	200	200	-	3853.176	Cr I	20	10	-
3859.216	Fe I	100	100	-	3855.723	In II	-	[5]	Ps	3853.164	Ce I, II	25	3	-
3859.211	Mg I	2	-	-	3855.703	Ce	2	2	-	3853.095	Cb	1	3	-
3859.142	Pr	4	4	-	3855.632	U	3 h	12	-	3853.09	S II	-	[8]	Hn
3859.014	U	8	4	-	3855.620	Sc	15	15	-	3853.060	Zr II	8	2	-
3858.950	Cb	20	50	-	3855.60	Au	4	4	-	3853.049	Ti I	18	4	-
3858.891	Cr I	35 wh	20 wh	-	3855.60	Dy	8	2	m	3853.041	Dy	100	-	-
3858.846	W	5	6	-	3855.60	Ho	-	4	Ex	3853.01	Si	-	5	Sy
3858.84	Mo	-	15	-	3855.581	Gd	15	6	-	3852.985	U	6	6 h	-
3858.81	Ca	-	2 h	-	3855.58	Tb	10	-	Ed	3852.962	Th	8	10	-
3858.78	Kr II	-	[5 whl]	Me	3855.578	Ru	4	15	-	3852.930	Ce	2	2	-
3858.741	Sm	20	-	-	3855.571	Cr I	30	30	-	3852.90	Nd	10	8	-
3858.686	Ru	4	4	-	3855.544	W	10	9	-	3852.837	Ru I	5	3 h	-
3858.685	V I	50	15	-	3855.500	Cb	-	50 h	Me	3852.831	W	5	5	-
3858.682	U	3	6	-	3855.453	Cb	10	-	-	3852.805	Pr	100	50	-
3858.608	Ta	10 h	2 h	-	3855.443	U	8	1	-	3852.706	Re	8	-	-
3858.555	Yb	-	3	-	3855.430	Zr II	8	3	-	3852.703	U	6	6 h	-
3858.55	Nd	3	3	-	3855.38	Tb	10	-	Ed	3852.615	Cb	1	8 h	-
3858.53	Xe II	-	[10]	Hu	3855.370	V I	50 r	50 r	-	3852.575	Fe I	150	100	-
3858.514	Sm	10 d	10 h	-	3855.328	Fe	2	1	-	3852.564	Ru	4	5 h	-
3858.508	U	2	2 h	-	3855.321	W	-	6	-	3852.497	Gd	100	8	-
3858.40	Dy	5	-	m	3855.302	Ce	8	3	-	3852.397	Mn	8	-	-
3858.395	Er	4	2	-	3855.286	Cr I	35	35	-	3852.392	Sc	15	15	-
3858.321	Mo	5	5	-	3855.24	Se	-	[8]	Bt	3852.387	Ce	8	25	-
3858.309	Hf	5 wh	5 wh	-	3855.192	Ce	2	-	-	3852.38	Nd	60	50	-
3858.301	Ni I	800 r	70 h	-	3855.16	U	2	2	-	3852.218	Cr I	60	12	-
3858.299	Co	18	4	-	3855.146	Cb	5	5	-	3852.137	Ru	12	10	-
3858.256	Pr	20	8	-	3855.08	N II	-	[5]	Fl	3852.135	Th	5	-	-
3858.184	U	-	2	-	3854.965	Ce	3	3	-	3852.106	Ce II	6	3	-
3858.144	Ti I	40	7	-	3854.941	Sm II	5	5	-	3852.10	Ti II	-	[10]	Sx
3858.09	Dy	6	-	m	3854.910	La II	-	40	-	3852.096	V I	20	10	-
3857.944	Ce II	3	2	-	3854.905	Mo	4	5	-	3852.089	U	4	8	-
3857.904	Sm II	8	10	-	3854.905	Pr	80 w	30	-	3851.997	W	5	2	-
3857.904	Ti I	6	3	-	3854.90	Dy	5	2	m	3851.990	Mo	10	15	-
3857.85	Nd	20	20	-	3854.862	U	2 h	6	-	3851.983	Re	20	-	-
3857.84	Tm	15	5	Me	3854.855	Au	5	5	-	3851.957	U	8	2	-
3857.821	Ce II	3	1	-	3854.82	Eu	6	-	Kn	3851.90	Ra II	-	[25]	Rs
3857.79	Er	6 d	-	-	3854.788	Cr	20 d	15 d	-	3851.882	Sm II	10	8	-
3857.68	Eu	4 w	-	-	3854.76	Ba II	-	[2]	Rs	3851.86	Tb	5	8	Ed
3857.65	Ho	-	4	Ex	3854.75	Cl II	-	[30]	Ks	3851.818	Ir	2	-	Ab
3857.644	Ce II	8	4 l	-	3854.727	Ru I	10	5 wh	-	3851.748	Nd	8	15	-
3857.631	Cr I	50	25	-	3854.705	Os	30	12	-	3851.732	U	15	2	-
3857.551	Ru	50	25	-	3854.696	Cb	3	4	-	3851.69	Cl II	-	[30]	Ks
3857.332	Sm	5	1	-	3854.68	Rh	4	4	-	3851.67	Ti II	-	[6]	Sx
3857.32	Sb II	-	5	-	3854.655	U	20	30	-	3851.667	F II	-	[200]	Di
3857.32	Kr II	-	[20 whl]	Me	3854.64	Eu	3	-	Kn	3851.657	Nd	20	-	-
3857.295	W	7	6	-	3854.574	Pr	2	4	-	3851.617	Pr	200 w	150 w	-
3857.240	Ce II	5	3	-	3854.565	Er	4	1	-	3851.59	Eu	8 w	5 wh	-
3857.21	Br	-	[6]	Bl	3854.560	Sm	5	5	-	3851.58	Fe	4	-	-
3857.203	Mo	-	60	-	3854.547	Th	20	20	-	3851.569	W II	6	3	-
3857.16	O II	-	[10]	Mh	3854.538	Mg I	2	5	-	3851.47	O II	-	[2]	Mh
3857.153	U	6	8	-	3854.322	Ce II	6	1	-	3851.459	Zr	2	-	-
3857.14	Nd	30	20 h	-	3854.230	U	20	-	-	3851.443	Ta	1	2	-
3857.089	Os I	150	15	-	3854.220	Cr I	40	15	-	3851.42	Cl II	-	[75]	Ks
3857.018	Ce	10	2	-	3854.198	Sm	200 wh	25	-	3851.4	Ho	4	-	Kn
3856.981	Ru	5	5 h	-	3854.187	Ce I, II	6	1	-	3851.393	Mo	6	5	-
3856.98	Ho	8	6 h	Ex	3854.123	Cb	2	3	-	3851.352	Ce	3	4	-
3856.95	Nd	20	15	-	3854.117	Mg I	2	8	-	3851.296	U	4	8	-
3856.818	W	-	10	-	3854.1	bh Ca	4	-	L	3851.259	Ir I	8	-	Ab
3856.800	Co	80	2	-	3854.053	Pb I	-	100	-	3851.02	Cl II	-	[100]	Ks
3856.745	U	6	-	-	3854.05	Ho	10	20	Kn	3851.2	Rb	-	[20]	Dr
3856.678	Cb	20	5	-	3854.04	Tb	2	-	Ed	3851.171	V I	50	16	-
3856.669	V	20	-	-	3853.90	Eu	3	-	-	3851.116	W	-	6	-
3856.535	Mn	15	30	-	3853.824	Fe	3	-	-	3851.04	O II	-	[10]	Fl
3856.523	Eu	4 w	-	-	3853.776	W	6	6	-	3850.981	Gd	10	6	-
3856.515	Rh I	50	20	-	3853.730	Ti I	12	3	-	3850.978	Fe	4	-	-
3856.459	Ru	50	8	-	3853.72	U	8	-	-	3850.953	Co I	100	-	-
3856.374	Th	8	5	-	3853.59	Cb	3 w	1	Me	3850.935	U	1	4	-
3856.373	Mo	5	4	-	3853.589	Os	8	8	-	3850.93	S II	-	[8]	Hn
3856.373	Fe I	500	300	S	3853.567	Ta	3	2	-	3850.825	Pr	50	15	-
3856.293	Ce	2 h	-	-	3853.492	Pr	10	8	-	3850.82	I II	-	[15]	Ke
3856.281	Cr I	20	15	-	3853.490	Sc	8	8	-	3850.820	Fe I	200	75	S
3856.27	U	-	3	-	3853.487	Mo	2	-	-	3850.819	Mo	-	25	-
3856.16	O II	-	[18]	Fl	3853.48	Nd	40	20	-	3850.81	O II	-	[5]	Fl
3856.09	Si	-	8	Sy	3853.471	Mn	25	20	-	3850.779	Ce	2	-	-

Wave-length	Element	Intensities	Arc Spk., [Dis.]	R	Wave-length	Element	Intensities	Arc Spk., [Dis.]	R	Wave-length	Element	Intensities	Arc Spk., [Dis.]	R
3850.713	Ce	2 h	-	-	3847.89	O II	-	[10]	FI	3845.435	Ir	8	-	-
3850.703	Gd	5	2	-	3847.88	Tb	8	-	-	3845.42	A	-	[10]	Rt
3850.667	Ir I	4	-	Ab	3847.873	Yt	8	4	-	3845.42	Cl II	-	[50]	Ks
3850.58	Cl II	-	[12]	Ks	3847.856	Yb	40 w	-	-	3845.275	Ce	3	2	-
3850.57	A	-	[400]	Rt	3847.85	Nd	60	50	-	3845.21	S II	-	[2]	Hn
3850.53	Eu	8 W	-	-	3847.84	Eu	12 w	-	-	3845.174	Fe I	100	60	-
3850.527	Dy	4	-	Kn	3847.835	U	8	12 h	-	3845.149	Hg	-	[30]	St
3850.449	Dy	4	1	Kn	3847.812	Ce	6 l	6 l	-	3845.125	U	2	6	-
3850.432	Ru I	50	10	-	3847.73	Cr	5 h	-	-	3845.099	Ti	2	-	-
3850.405	V II	1	10	-	3847.521	Sm II	6	10	-	3845.016	Th	20 w	10 w	-
3850.40	Mg II	8	5	FI	3847.495	Ru	4	-	-	3845.014	Ir I	15	2 h	-
3850.244	U	1	8 h	-	3847.490	W	18	15	-	3844.973	Mg I	2	10	-
3850.23	Sb II	-	20	-	3847.423	Au	5	5	-	3844.937	U	6	-	-
3850.227	Nd	10	2	-	3847.40	Cr	5 wh	-	-	3844.892	V I	25	7	-
3850.164	V I	15 W	-	-	3847.38	N II	-	[10]	FI	3844.89	Au	-	5	-
3850.122	Ce	3	-	-	3847.331	V I	100	70 h	-	3844.844	Ce	4	-	-
3850.103	Co I	5	-	-	3847.262	Er	4	-	-	3844.75	A	-	[5]	Rt
3850.049	Dy	3	-	Kn	3847.25	Nd	20	10	-	3844.680	U	4	-	-
3850.042	Cr I	40 r	40 r	-	3847.248	Mo	25	25	-	3844.584	Gd	15	15	-
3849.987	F II	-	[600]	Di	3847.242	W	5	4	-	3844.558	Pr	50	10	-
3849.969	Fe I	500	400	S	3847.19	Eu	2	-	-	3844.504	Sm II	2	2	-
3849.944	Os I	125	20	-	3847.120	Ce	2	-	-	3844.45	Kr II	-	[50 whl]	Me
3849.87	Xe II	-	[25 whl]	Hu	3847.086	F II	-	[800]	DI	3844.449	Ir	7	-	-
3849.853	U	4	4	-	3847.062	U	5	6	-	3844.438	V I	100	50 h	-
3849.785	Mo	5	5	-	3847.010	Zr I	10	4	-	3844.30	Dy	6	3	m
3849.758	Ta	3 h	4 h	-	3847.0	bh B	100	-	L	3844.283	Fe	10	1	-
3849.756	V	-	3	-	3846.99	Dy	10	2	Kn	3844.276	Ni I	3 h	-	-
3849.752	Sm	8	3	-	3846.989	Ce	2	3	-	3844.248	Ce	5 s	4 s	-
3849.746	Cb	2	2	-	3846.986	Sm	9	3	-	3844.232	Sc	10	10	-
3849.707	U	2	10 h	-	3846.974	Er	7	-	-	3844.232	U	8	15	-
3849.681	Ce	2	-	-	3846.969	Nd	20	20	-	3844.231	Er	18	2	-
3849.63	Eu	2	-	-	3846.86	Re	3	-	m	3844.23	Eu	10 W	-	-
3849.60	Se	-	[4]	Bl	3846.83	Kr II	-	[5 h]	Me	3844.200	W	-	9	-
3849.59	Tb	4	-	Ed	3846.805	Ru	5	-	-	3844.085	Cb	4	3	-
3849.58	Ni II	-	15 h	-	3846.803	Ce	4	1	-	3844.039	Ta	8 h	2 h	m
3849.569	Ce II	3	-	-	3846.803	Fe I	125	100	S	3844.02	K II	-	[10]	Bn
3849.534	Cr I	20	20	-	3846.761	Sm	5	-	Kn	3844.005	U	10	10	-
3849.524	Hf II	2 h	4	-	3846.71	Nd	30 d	30 d	-	3843.983	Mn	75	100	-
3849.42	Ta	4 h	2 h	m	3846.689	Ir	12	-	-	3843.926	Cb	5	3	-
3849.40	Eu	4 w	3 w	-	3846.68	Ho	10	10	Kn	3843.895	Mo	5	6	-
3849.400	Dy	20	-	-	3846.676	Ru	12	10	-	3843.86	Ho	8	10	Ex
3849.365	Cr I	40 h	30 h	-	3846.661	U	2	10	-	3843.811	U	6	2 h	-
3849.339	U	2	3	-	3846.654	Sc	8	8	-	3843.788	Sm II	10 d	10	-
3849.324	V I	60	25	-	3846.636	Ta	5	4 h	-	3843.768	Ce	12	1 h	-
3849.274	Hg	-	[2]	St	3846.605	Pr	70 d	30	-	3843.692	Co I	60	-	-
3849.254	Zr I	10	4	-	3846.563	U	10	-	-	3843.665	Os	80	12	-
3849.183	Hf	15	15	-	3846.520	Ce	4	1	-	3843.61	Lu	15 h	-	Me
3849.068	Ce	4 l	4 l	-	3846.516	Yt II	2	2	-	3843.58	O II	-	[10]	FI
3849.013	La II	200	150	-	3846.449	Ti	15	3	-	3843.512	Sm II	3	10	-
3849.012	Sm	10	4	-	3846.415	Fe	50	75	-	3843.51	Nd	-	20	-
3849.007	Bi	-	2	-	3846.411	Os	15	12	-	3843.506	V I	50	15	-
3849.005	Rh I	2	2	-	3846.39	Eu	4	2	Kn	3843.474	W	3	6	-
3849.002	Er	12	2	-	3846.358	Dy	25	-	-	3843.469	Ce	3	5	-
3848.983	Cr I	80 d	50 d	-	3846.282	Sm	8	3	-	3843.46	U	8	8 h	-
3848.96	Re	3	-	m	3846.243	U	10	1	-	3843.453	Re I	50	-	-
3848.945	Ru	8	12	-	3846.242	Th	10	8	-	3843.453	Cb	2	2	-
3848.92	Mg	-	2	-	3846.214	W	20	20	-	3843.41	S	-	[15]	Ma
3848.806	Sm	150 d	10	-	3846.180	Mo	5	5	-	3843.261	Gd	10	-	-
3848.773	Mg I	2	12	-	3846.140	Ce	2	-	-	3843.26	Cl II	-	[100]	Ks
3848.75	Tb	100	200	Ed	3846.12	Kr I	-	[2]	Me	3843.259	Fe	125	100	S
3848.716	U	4	3	-	3846.027	Bi	-	100	-	3843.159	Ru	10	5	-
3848.7	bh B	200	-	L	3846.001	Fe	10	1	-	3843.14	Eu	3 w	2	-
3848.618	U	10	8	-	3845.997	Sm	10	4	-	3843.024	Zr II	40	40	-
3848.597	Ce	20	2	-	3845.997	La II	40	50	-	3843.004	Ir	8	-	Ab
3848.58	Xe II	-	[3]	Hu	3845.994	Nd	30	25	-	3843.000	Sc II	25	20	-
3848.524	Nd	10	20	-	3845.98	Se II	-	[12]	Kh	3842.995	V	20	-	-
3848.482	W	-	2 h	-	3845.978	Kr I	-	[15]	IHu	3842.988	Nd	30	40	-
3848.40	Eu	2	1 h	-	3845.974	V	5	2	-	3842.988	Ce	18	25	-
3848.36	Dy	4	-	m	3845.962	Ir	4 h	2 h	-	3842.986	U	12	12	-
3848.332	Pr	3	2	-	3845.954	Mo	20	20	-	3842.98	Er	15	2	-
3848.310	Ti I	10	2	-	3845.934	Ce	2	1	-	3842.98	Dy	5	2	Ed
3848.309	Nd	40	-	Kn	3845.897	Cb	10	30	-	3842.975	Fe I	3	-	-
3848.301	Mo	25	20	-	3845.857	U	4	4	-	3842.958	Mo	3	3	-
3848.298	Fe	5	2	-	3845.845	W	-	9	-	3842.93	Ti II	-	[6]	El
3848.24	Mg II	10	10	FI	3845.842	Ti	4	1	-	3842.92	I II	-	[7]	Ke
3848.233	Nd	10 d	10 d	-	3845.82	Cl II	-	[30]	Ks	3842.912	Th	10	8	Fd
3848.20	Eu	2 w	1	-	3845.8	Bi II	-	[100]	MI	3842.885	Fe	6	2	-
3848.194	Yt II	2	4 h	-	3845.704	Fe	10	6	-	3842.874	Ta	5	5	-
3848.160	Ir	10	2	-	3845.68	Cl II	-	[75]	Ks	3842.82	As II	-	50	Ro
3848.105	Ce II	8	1	-	3845.61	Tb	10	15	Ed	3842.82	O II	-	[10]	FI
3848.090	Mg I	2	3	-	3845.483	Ce	5 s	5 s	-	3842.80	Ba II	-	[5]	Rs
3848.069	U	6	6	-	3845.471	Co I	500 R	100	-	3842.713	U	4 h	6 h	-
3848.046	Ta	30	5	-	3845.454	V	20	-	-	3842.707	Cb	5	5	-
3848.018	Tm	400	250	Me	3845.454	Sc	10	10	-	3842.70	V I	5	2	m
3847.89	Er	18 d	1	-	3845.445	Zr I	20	20	-	3842.695	Nd	30	12	Kn

3842.6—3834.9 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3842.661	Ru	6	3 h	-	3840.328	Ti	2	-	-	3837.534	Ce	2	-	-
3842.65	Fe	1	-	-	3840.304	Os	150	20	-	3837.527	Ir I	8	-	Ab
3842.614	Ti I	15	5	-	3840.295	Ir	2	-	Ab	3837.510	U	2	2 h	-
3842.58	Mo	-	25	-	3840.26	Tb	50	-	Ed	3837.49	Ti II	-	[6]	Sx
3842.57	Ca	-	2	-	3840.254	Gd	2	-	-	3837.45	Ho	15	6 h	Ex
3842.568	Cu II	-	2	-	3840.140	V I	12	5	-	3837.449	Cs	-	[4]	Sv
3842.54	Eu	10 W	-	Kn	3840.026	Hf	10	6	-	3837.43	Eu	3 W	3 Wh	-
3842.49	Tb	40	50	Ed	3839.935	Yb	3	-	-	3837.418	Er	10	1	-
3842.463	U	3	6	-	3839.904	U	8	4	-	3837.29	Mo	-	100 w	-
3842.432	Nd	10	10	-	3839.81	Nd	30	20	-	3837.272	U	15	-	-
3842.363	Pr	80	40	-	3839.80	Dy	4 h	1	m	3837.230	W	-	10	-
3842.36	Eu	3 W	2	-	3839.777	Mn	100	125	4	3837.212	Ce II	8	-	-
3842.348	Sm II	5	5	-	3839.76	Sb	-	-	Kz	3837.18	Tb	5	-	Ed
3842.341	Ta	3 h	-	-	3839.748	Ce	2	-	-	3837.142	Fe I	25	6	-
3842.317	Al II	-	[2]	Sy	3839.699	Th	15	15	-	3837.141	Mo	-	20	-
3842.303	W	10	12 l	-	3839.695	Ru	50	30	-	3837.14	P	-	[30]	Gu
3842.28	Kr II	-	[20 wh]	Me	3839.642	Gd	25	-	-	3837.080	Cb	5	10	-
3842.272	In II	-	[35]	Ps	3839.632	U	30	2	-	3836.969	Ru	4	-	-
3842.26	Zn II	-	[15]	Vs	3839.630	Fe	3	4	-	3836.960	W	9	7	-
3842.217	In II	-	[25]	Ps	3839.62	Tb	15	-	Ed	3836.923	Gd	15	18	-
3842.213	Al II	-	[5]	Sy	3839.53	U	-	5	-	3836.905	Mo	4	1	-
3842.213	Gd	10	15	-	3839.497	Nd	10	12	-	3836.81	Ti II	-	[12]	Sx
3842.20	N II	-	[10]	Fl	3839.497	Ce	6	1	-	3836.775	Ti	18	5	-
3842.191	U	5	8	-	3839.475	Mo	5	5	-	3836.764	Zr II	15	20	-
3842.168	In II	-	[25]	Ps	3839.455	Yb	2	15	-	3836.742	Cb	4 w	15	-
3842.125	In II	-	[18]	Ps	3839.418	Ta	2	-	-	3836.703	Ru	8	40	-
3842.051	Ce	3	-	-	3839.381	V I	30	5	-	3836.603	Ta	30	3	-
3842.05	Ho	4	8	Ex	3839.37	Kr II	-	[4 wh]	Me	3836.60	Se	-	[8]	Bt
3842.050	Co I	400 R	20	-	3839.317	Ir	4	-	-	3836.598	Ti	10	3	-
3842.037	Al II	-	[10]	Sy	3839.26	Hg	-	[50]	Ps	3836.541	Nd	80	100	-
3842.02	Cr I	3	2	-	3839.259	Fe	100	75	S	3836.54	Kr II	-	[30 wh]	Me
3842.016	Dy	20	-	-	3839.257	W	7	6	-	3836.522	V	10	-	-
3841.964	Th	20	20	-	3839.19	S	-	[8]	Ms	3836.520	U	6	15	-
3841.95	Nd	30	30	-	3839.190	Sm	25	3	-	3836.519	Sc	25	25	-
3841.93	Se	-	[20 h]	Bt	3839.18	Tb	8	-	Ed	3836.515	Sm	50	25	-
3841.91	Pb	-	5 h	Kl	3839.155	Ce	4	3 l	-	3836.514	Gd	100 wh	60	-
3841.890	V I	35	12	-	3839.134	Ir	6	-	Ab	3836.512	Eu	10	10	-
3841.844	Er	12 d	1 d	-	3839.130	Zr I	10	10	-	3836.51	Dy	100	40	-
3841.810	Cb	10	10	-	3839.034	Ta	30	5	-	3836.505	Th	50 w	50 w	-
3841.77	Tb	5	-	Ed	3839.002	V I	60	10	-	3836.505	Er	40	10	-
3841.749	U	6 h	8 h	-	3838.996	U	6	10	-	3836.501	Ir	15	-	Ab
3841.747	Ti	20	12	-	3838.981	Nd	20	30	-	3836.489	Ca	2	2 h	-
3841.716	Ce	5 l	6 l	-	3838.931	Sm II	10	15	-	3836.477	Au	30	30	-
3841.703	Ir I	10	2 h	-	3838.728	Ru	10	10	-	3836.448	Cb	5	3	-
3841.691	Cb	-	10	-	3838.724	Nd	50	25	-	3836.333	Fe	100	60	-
3841.624	Ti I	2	-	-	3838.67	Dy	10	-	-	3836.324	Re I	40	-	-
3841.62	Pb	-	60	Sx	3838.59	Os I	3	-	Ab	3836.25	Se II	-	[20]	Bl
3841.603	Ce	2	-	-	3838.542	Ce	35	3	-	3836.150	Cu II	-	2 wh	Sh
3841.6	Bi II	-	[25]	MI	3838.504	W	15	20	-	3836.13	Eu	6 W	-	-
3841.54	Al	-	[5]	Rt	3838.39	N II	-	[25]	Fl	3836.121	Sm	20	4	-
3841.493	Re	15	-	-	3838.37	Cl II	-	[20]	Ks	3836.112	Ce II	15	6	-
3841.467	Sn II	-	6	-	3838.37	Hf II	2	3	-	3836.108	Nd	40	15	-
3841.457	Co I	60	-	-	3838.36	Eu	2 w	-	-	3836.10	C II	-	2 h	En
3841.435	Ce	3 h	2	-	3838.341	Pr	5	3	-	3836.084	Ti II	15	30	-
3841.40	S	-	[5]	Bl	3838.339	Er	10	-	-	3836.070	Cr I	25	8	-
3841.316	Dy	100	-	-	3838.33	Nd	40	25	-	3836.056	Os I	150	20	-
3841.292	Os	30	10	-	3838.318	Ca	2	2	-	3836.054	V I	10	15	-
3841.277	Cr I	150	80	-	3838.283	Zr II	10	4	-	3835.990	Ru	6	1 h	-
3841.19	Sb	-	5 h	-	3838.258	Mg I	300	200	-	3835.964	Zr I	25	5	-
3841.18	Lu	100	8	Me	3838.247	Mn	10	-	-	3835.919	U	4	3	-
3841.15	Ba I	5	-	Fl	3838.24	Eu	4	-	Kn	3835.904	Ce	3	-	-
3841.082	Mn	50	50	-	3838.24	I	-	[10]	Ke	3835.900	Co I	8	-	-
3841.051	Fe I	500	400	S	3838.204	Tm	80	60	Me	3835.884	W	7	5	-
3841.037	Ce	3	2	-	3838.15	Li I	5	-	Fl	3835.748	Ce	4	2	-
3841.03	As	-	10	Ro	3838.150	U	8	10	-	3835.727	Sm II	15	15	-
3841.006	Pr	30	10	-	3838.094	He I	-	[2]	Ps	3835.703	Ir	2	-	Ab
3840.985	Ru	8	6	-	3838.067	Ru I	12	5 wh	-	3835.700	W	-	5	-
3840.96	Eu	7 d	5	-	3838.036	Fe	1	1	Do	3835.689	Co	10	4	-
3840.921	Er	6	-	-	3837.919	W	-	6	-	3835.65	Er	9 w	-	-
3840.92	Kr II	-	[5 wh]	Me	3837.910	Rb II	-	[2]	Rr	3835.560	V I	50	12	-
3840.92	I	-	[2]	Ke	3837.909	Nd	10	2	Kn	3835.497	Co I	3	2	-
3840.91	Dy	5	-	-	3837.882	Mo	3	3	-	3835.397	H I	-	[40]	Rk
3840.80	Ag I	20	3 h	Fn	3837.88	Eu	6 W	5 W	-	3835.363	Ir	3	-	-
3840.76	Ru I	4	6	-	3837.880	Th	10	8	-	3835.35	Ho	2	6 h	Ex
3840.752	V I	12 r	-	-	3837.86	Dy	2	1	m	3835.343	Th	5	3	-
3840.747	Ce	2	-	-	3837.852	V	5	-	-	3835.312	Mo	8	25	-
3840.709	La II	50	70	-	3837.83	Tb	8	-	Ed	3835.26	Er	25 d	2 d	-
3840.596	Sm	3	3	-	3837.828	U	12	8 h	-	3835.185	V I	30	-	-
3840.58	Mo	6 w	6 w	-	3837.816	Kr I	-	[30]	I	3835.183	In	-	15	-
3840.453	Ce	30	35	-	3837.723	Ir	15	4	-	3835.175	Cb	20	20	-
3840.441	Sm II	15	10	-	3837.703	Kr I	-	[30]	IHu	3835.14	U	4	8	-
3840.44	Dy	4 h	-	Ed	3837.65	Sr	-	3	Sy	3835.074	La II	12	15	-
3840.440	V I	40	20	-	3837.631	Er	15	1	-	3835.049	W	15	20	-
3840.439	Fe I	400	300	S	3837.631	V I	10	-	-	3835.048	Ru	50	6	-
3840.34	Zn II	3	[50]	Vs	3837.60	Ho	2	6 h	Ex	3834.997	Gd	8	10	-

Wave-length	Element	Intensities	Dis.	R	Wave-length	Element	Intensities	Dis.	R	Wave-length	Element	Intensities	Dis.	R
Arc	Spk.,				Arc	Spk.,				Arc	Spk.,			
3834.974	Mo	8	6	-	3832.68	Tb	8	-	Ed	3830.273	V	40	4	-
3834.945	Sm	3	-	Kn	3832.659	Ce	2	4	-	3830.215	U	5	6	-
3834.918	Pr	30	15	-	3832.648	Pr	10	8	-	3830.2	bh B	50	-	L
3834.91	Eu	4 W	4 W	-	3832.641	W	4	5	-	3830.133	W	7	8	-
3834.84	N	-	[8]	Du	3832.565	U	5	1	-	3830.069	Th	4	3	-
3834.811	V I	6	1	-	3832.46	Hg	-	[18]	Pa	3830.067	Er	6	-	-
3834.809	U	3	6	-	3832.436	Er	12	1	-	3830.055	Mo	5	6	-
3834.782	Ce II	6	-	-	3832.432	V	2	-	-	3830.051	Ir	2	-	-
3834.754	Rh I	4	5	-	3832.431	Th	8	5	-	3830.032	Cr I	150 w	50	-
3834.735	Cr I	25	12	-	3832.43	Eu	6 W	4 W	-	3830.030	Ce	4	2	-
3834.722	In II	-	[18]	Pa	3832.406	Re	20	-	-	3830.018	Hf	10	6	-
3834.69	Br	-	[2]	Bl	3832.37	Mo	-	10 h	-	3830.002	Cb	5	5	-
3834.686	In II	-	[25]	Pa	3832.349	Cr I	18	2	-	3830.000	Nd	20	8	Kn
3834.679	A I	-	[800]	IHu	3832.336	Ce	2	-	-	3829.945	Mn	8	-	-
3834.647	In II	-	[35]	Pa	3832.312	V	-	2	-	3829.942	Ce II	3	-	-
3834.639	Mo	8	6	-	3832.306	Mg I	250	200	-	3829.914	Mo	4	3	-
3834.608	Th	15 w	10 w	-	3832.30	Ti II	-	[30]	El	3829.816	Ce	2	-	-
3834.606	In II	-	[40]	Pa	3832.291	Pd I	150	150	-	3829.806	Re I	25	-	-
3834.601	Sm	25	15	-	3832.275	Ta	5 h	3 h	-	3829.803	U	15	-	-
3834.58	U	2	4	-	3832.244	W	4	6	-	3829.80	N II	-	[10]	Fl
3834.574	Pr	-	2	-	3832.231	Ce	5	-	-	3829.791	Mo	5	5	-
3834.563	In II	-	[40]	Pa	3832.20	U	6	-	-	3829.77	Fe	8	2	-
3834.556	Ce II	10	4	-	3832.179	Ir	15	-	Ab	3829.77	Xe II	-	[5 h]	Hu
3834.55	Dy	3	1	m	3832.176	Os	30 l	10	-	3829.77	Ne II	-	[40]	Bn
3834.473	Sm	5	2	-	3832.12	C II	-	6 h	En	3829.76	Br	-	[3]	Ks
3834.404	Nd	2	-	Kn	3832.110	Mo	10	8	-	3829.733	Ti I	7	2	-
3834.364	Mn	75 r	75	-	3832.055	Ce	3	2	-	3829.694	Ce II	4	2	-
3834.24	N I	-	[15]	Du	3831.928	Ce	3	2	-	3829.680	Mn	60	60	-
3834.228	Re I	50	-	-	3831.9	Ho	-	6 h	Ex	3829.676	Ir I	4 h	-	Ab
3834.225	Fe I	400	400	S	3831.865	U	15	3 h	-	3829.67	Hf	3	1	Me
3834.224	V I	20	12	-	3831.85	Tb	15	-	Ed	3829.661	V	2	6	-
3834.22	Rh	3	-	-	3831.838	Cb	5	300	-	3829.659	Pb	3 h	3 h	-
3834.220	Ce	6	12	-	3831.832	V I	15	2	-	3829.647	Pr	10	10	-
3834.199	Pr	-	4	-	3831.795	Ru	60	50	-	3829.63	Nd	40	30	-
3834.147	V I	5	2	Me	3831.785	Ce	3	4 h	-	3829.532	V	-	4	Me
3834.039	W	7	10	-	3831.765	Mo	4	3	-	3829.52	Er	12	2	-
3833.963	Ca I	5	-	-	3831.736	Th	5	8	-	3829.479	Ru I	4	5	-
3833.936	Cb	3	3	-	3831.690	Ni	300	10	-	3829.459	Fe	15	8	-
3833.920	Ti I	7	2	-	3831.672	Ce	3	1	-	3829.435	Eu	5	10	-
3833.889	Rh I	25	50	-	3831.643	Dy	10	-	-	3829.435	Pr	10	10	-
3833.883	Ir	50	-	Ab	3831.560	Ce	4	-	-	3829.411	Gd	25 h	-	-
3833.862	Zr II	3	1	-	3831.507	Sm II	6	15	-	3829.41	Nd	50	40	-
3833.862	Mn	75	75	-	3831.494	Zr	2	-	-	3829.410	Th	40 w	20 w	-
3833.828	Sm II	15	10	-	3831.465	U	25	25	-	3829.408	Ce	3	2	-
3833.80	V I	10	-	Me	3831.41	S	-	[10]	Hn	3829.406	Sm	15	-	-
3833.783	Cb	2	5	-	3831.394	Pr	6	2	-	3829.406	Ti	30	12	-
3833.770	Ce	3	-	-	3831.305	Zr I	5 h	1	-	3829.390	U	6	5	-
3833.748	Mo	80	25	-	3831.201	Cb	2	2	-	3829.382	Au	25	20	-
3833.742	Ta	40	200	-	3831.17	Eu	4 W	6 Wh	-	3829.350	Mg I	100 w	150	-
3833.704	Re I	30	-	-	3831.17	Kr II	-	[2 whl]	Me	3829.332	Ru	8	3	-
3833.681	Ti	5	1	-	3831.14	Au	8	5	-	3829.33	S	-	[5]	Bl
3833.669	Hf	10	6	-	3831.135	Hf	25	25	-	3829.283	Ce	2	-	-
3833.629	Ce	4	4	-	3831.083	Ce	10	2	-	3829.27	Cl II	-	[15]	Ks
3833.604	Nd	20	12	-	3831.071	Mo	4	4	-	3829.21	Cb	-	[10 h]	-
3833.604	Pr	10	8	-	3831.04	Dy	5	3	m	3829.2	Pb II	-	[2]	Ea
3833.574	He I	-	[4]	Pa	3831.033	Ir	10	-	-	3829.156	Sm	5	6	-
3833.47	Mo	-	25	-	3831.032	Cr I	40	25	-	3829.151	Nd	10	15	-
3833.40	Tb	8	3	Ed	3831.032	V	1	5	-	3829.127	W	12	10	-
3833.40	I II	-	[7]	Ke	3831.030	Nd	60 d	30	-	3829.126	Fe	4	2	-
3833.310	Fe I	100	60	-	3830.993	W	6	7	-	3829.108	Zr	5 h	4 h	-
3833.279	Ir	2	-	Ab	3830.94	S	-	[8]	Ms	3829.07	Lu	10 h	-	Me
3833.261	Cb	5 w	10	-	3830.915	Nd	3	-	Kn	3829.033	U	8	10	-
3833.226	V I	10	2	-	3830.910	Ce	3	-	-	3828.947	Ta	25	10	-
3833.190	Ti	12	3	-	3830.877	Ru I	10	4	-	3828.93	Eu	6 wh	8 wh	-
3833.151	Gd	2 h	-	-	3830.860	Fe I	12	4	-	3828.92	Ba I	5	-	-
3833.10	O II	-	[10]	Fl	3830.815	Mo	5	5	-	3828.873	Mo	40	30	-
3833.059	Sc II	10	8	-	3830.80	Cl II	-	[15]	Ks	3828.842	Nd	20	20	-
3833.047	Sm	15	3	-	3830.761	Fe I	10	3	-	3828.836	V I	15	3	-
3833.042	Pr	20	20	-	3830.722	W	8	9	-	3828.81	U	2	5	-
3833.041	Er	4	-	-	3830.719	Pr	100	60	-	3828.74	As II	-	10	Ro
3833.037	Th	20 w	10 w	-	3830.650	Ir I	4	-	Ab	3828.714	Ru I	30	8	-
3833.035	Nd	60	30	-	3830.641	Cb	1 h	20 w	-	3828.599	Ce	4	-	-
3833.023	U	20 r	15	-	3830.612	U	3 h	5	-	3828.559	V I	20	5	-
3832.904	Pb	-	5	-	3830.555	Ce	4	-	-	3828.55	Br I	-	[12]	Ks
3832.90	Dy	10	-	-	3830.516	Ir	2 h	-	-	3828.51	U	6	-	-
3832.899	Co I	5	-	-	3830.51	Er	8 w	1 h	-	3828.500	Fe	2	1	-
3832.889	Yt II	30	80	-	3830.49	Ho	2	6	Ex	3828.49	Br	-	[6]	Bl
3832.884	Ce	3	2	-	3830.476	Nd	10	10	-	3828.479	Rh I	100	60	-
3832.873	Ni I	25	-	-	3830.45	O II	-	[18]	Fl	3828.465	Ir	30	-	-
3832.856	W	8	7	-	3830.43	A II	-	[10]	Rt	3828.409	Sm	8	2	-
3832.835	V I	25	5	-	3830.39	N I	-	[150]	Du	3828.389	Ce	3	2	-
3832.83	Pb	-	50	Sx	3830.365	Pr	10	7	-	3828.388	Th	5	5	-
3832.802	Sm	6	1	-	3830.341	Ir	2	2 h	-	3828.328	Re I	30	-	-
3832.788	Th	3	5	-	3830.300	Sm II	50	10	-	3828.238	Cb	5	15	-
3832.753	Ce II	5	-	-	3830.29	Tb	30	8	Ed	3828.206	Ce	-	-	-

3828.1—3819.8 Å.

Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R
3828.193	Ti I	35	15	-	3825.390	Cr I	40	15	-	3822.888	V I	40	25	-
3828.19	Dy	10	3	m	3825.323	Mo	4	4	-	3822.874	Ce	2	1	-
3828.18	Er	15 w	3 w	-	3825.317	V I	6	2	-	3822.865	Th	5	3	-
3828.179	Sc	30	30	-	3825.27	Nd	20 d	10 d	-	3822.70	Zr	2	2	Me
3828.17	Nd	50	40	-	3825.267	Zr	40	60	-	3822.591	Dy	10	-	-
3828.144	Th	8	8	-	3825.249	O I	-	[18]	Fh	3822.577	Ir	2	-	Ab
3828.058	U	3	8	-	3825.247	Er	10 d	2 w	-	3822.555	U	12	12	-
3828.055	Sm	-	8	-	3825.160	U	5	5	-	3822.474	Nd	4	10	Kn
3828.021	Ti	6	1	-	3825.134	Eu	3	5 h	-	3822.414	Zr I	10	1	-
3827.986	Nd	6	8	-	3825.090	O I	-	[20]	Fh	3822.410	U	4	4	-
3827.985	Ce	3	-	-	3825.047	Cu I	40	3	IBu	3822.4	bh Sr	4	-	L
3827.89	Pb	-	2	Kl	3825.040	Th	8	10	-	3822.317	Sm	15	4	-
3827.855	Ca	8	1	-	3825.029	U	15	-	-	3822.316	Pr	2	2	-
3827.825	Fe I	200	200	S	3825.023	Sb II	-	2 h	Sp	3822.312	Er	18 d	2 w	-
3827.674	Ti I	5	1	-	3825.013	Gd	4	8	-	3822.29	Nd	20 d	10 d	-
3827.621	Re	15	-	-	3824.996	Sm II	2	8	-	3822.262	Rh I	100	100	-
3827.62	Cl II	-	[150]	Ks	3824.932	Ru I	30	25	-	3822.210	W	-	8	-
3827.605	Ce	3	3	-	3824.876	Cb	30	50	-	3822.170	Ce	2	-	-
3827.572	Fe I	4	2	-	3824.860	Ce	5	-	-	3822.149	Th	10	10	-
3827.554	Ru	4	1 wh	-	3824.803	Sm	10	1	-	3822.092	Cr I	10	6	-
3827.481	U	4	1	-	3824.789	Nd	40	30	-	3822.091	Ru	50	25	-
3827.470	Ti I	3	-	-	3824.78	Yt II	1	5 h	-	3822.07	N I	-	[35]	Du
3827.44	P II	-	[150 I]	Gu	3824.779	Mo	4	4	-	3822.028	Ti I	18	8	-
3827.41	Cd II	-	5	m	3824.764	Er	8 w	1	-	3822.022	Pd I	3 h	-	Sh
3827.375	Ce	8	10	-	3824.762	Th	20 d	10	-	3822.009	V I	70	40	-
3827.365	Gd	10	10	-	3824.721	U	5	10	-	3821.959	U	15	-	-
3827.356	Sm	10	8	-	3824.533	Sm II	5	8	-	3821.950	Mo	5	5	-
3827.348	W	4	3	-	3824.524	Ir	25	8	-	3821.91	Au	-	5 wh	-
3827.29	Eu	4 W	5 W	-	3824.444	Fe I	150	100	S	3821.838	Fe I	50	30	-
3827.274	Zr	2	-	-	3824.425	O I	-	[10]	Fh	3821.827	Sm II	25	8	-
3827.214	Ce II	6	1	-	3824.419	Ce	3	3	-	3821.817	Pr	50	50	-
3827.2	Rb	-	[40]	Dr	3824.386	W	12	15	-	3821.77	Nd	50 w	4 w	-
3827.2	Pb II	-	[20]	Ea	3824.349	Th	20 w	20 w	-	3821.735	Er	10 h	1	-
3827.156	Mo	25	25	-	3824.302	Fe	7	7	-	3821.726	Sm	25	5	-
3827.136	Os	50	20	-	3824.169	Sm II	5	8	-	3821.725	Ti I	20	10	-
3827.135	Pd I	4	25 wh	-	3824.168	Mo	5	5	-	3821.710	Ir	3 h	-	Ab
3827.041	Re I	30	-	-	3824.146	W	7	8	-	3821.700	Ce II	6	10	-
3827.012	Cb	5	5	-	3824.116	Ce	2	1	-	3821.646	Ru	4	-	-
3826.969	V	1	25	-	3824.08	Nd	6 d	4 d	-	3821.642	Mo	5	5	-
3826.969	Ti I	12	2	-	3824.078	Fe I	5	3	-	3821.642	Os	8	5	-
3826.960	Ir	8	1 h	Ab	3824.071	Pr	2	2	-	3821.64	O II	-	[10 I]	Mh
3826.947	Th	10	8	-	3824.00	Dy	5	-	m	3821.582	Cr I	12	8	-
3826.933	W	5	4	-	3823.995	Cb	-	10 wh	-	3821.574	Ce	2	-	-
3826.91	Nd	40 w	25 w	-	3823.990	V I	35	15	-	3821.5	Fe	-	[3 h]	Di
3826.908	Cu II	-	2 h	Sh	3823.903	Ce I, II	8	-	-	3821.487	V I	50	30	-
3826.86	Xe I	-	[15]	Me	3823.893	Mn	50 h	50	-	3821.47	Dy	4	-	m
3826.849	Ta	25	3	-	3823.823	U	3	-	-	3821.431	Th	15	15	-
3826.846	Fe	6	2	-	3823.80	Nd	20 d	10 d	-	3821.43	Eu	3 w	3 w	-
3826.83	A	-	[15]	Rt	3823.795	Sm	15	10	-	3821.353	I	-	[25]	Ke
3826.819	Er	12 d	2 d	-	3823.761	Sc	15	10	-	3821.30	K II	-	[10]	Bn
3826.774	V I	12	3	-	3823.760	Ca	2	2	-	3821.270	Ce II	8	1	-
3826.74	Tb	8	-	Ed	3823.754	Re	25 w	-	-	3821.223	U	-	8	-
3826.708	Pr	-	4	-	3823.748	V I	10	2	-	3821.191	Cb	10 W	10 W	-
3826.708	Rb II	-	[15]	Rr	3823.74	Xe I	-	[10]	Me	3821.178	Fe	100	100	-
3826.708	Ce	4 l	6 l	-	3823.695	Ce	5	-	-	3821.132	Nd	2	-	Kn
3826.695	Mo	30	25	-	3823.595	Ta	15	10	-	3821.020	U	4 h	4	-
3826.68	Eu	15 W	10 W	-	3823.589	Th	5	10	-	3820.921	Mo	6	4	-
3826.634	Os	30	12	-	3823.522	Cr I	40	30	-	3820.884	Cu I	10	3	-
3826.626	Ir I	2	-	Ab	3823.513	Mn	75 h	75	-	3820.874	Cr I	10	6	-
3826.613	Hg	-	[30]	St	3823.511	Hf II	2 h	1 h	-	3820.871	Ce II	5	3	-
3826.565	Sm	2	3	-	3823.510	Sm	15	15	-	3820.866	Nd	4	2	Kn
3826.530	Ce	4	-	-	3823.486	Ce	2	1	-	3820.817	Sm	8	6	-
3826.425	Cr I	40	20	-	3823.469	O I	-	[125]	Fh	3820.807	Pr	4	6	-
3826.416	Nd	10	20	-	3823.447	U	5	3	-	3820.806	Th	20	20	-
3826.41	Eu	3 W	-	-	3823.41	Zr II	15	5	Ke	3820.801	Er	15	5	-
3826.39	Tm	10	-	Me	3823.377	Ir	20	3	-	3820.744	Cb	2	-	Me
3826.292	Pr	80 d	50 d	-	3823.349	Eu	3	5	-	3820.742	Ta	6	4	-
3826.27	Xe II	-	[2 h]	Hu	3823.327	Th	5	8	-	3820.734	Hf	5 h	4 h	-
3826.210	Sm II	10	15	-	3823.29	A	-	[3]	Rt	3820.545	Ce	3	2	-
3826.193	W	10	12	-	3823.255	Nd	4	6	-	3820.431	Nd	-	40	-
3826.172	Ta	10	8	-	3823.213	V I	35	20	-	3820.429	Fe I	800	600	-
3826.15	Kr II	-	[2 h]	Me	3823.184	Pr	125	25	-	3820.422	Ce	3	4	-
3826.105	Ru I	8	3	-	3823.15	Mo	-	20 h	-	3820.411	Pr	2	2	-
3826.056	Gd	8	8	-	3823.135	Cb	2	3	-	3820.297	V I	25	20	-
3825.884	Fe I	500	400	S	3823.12	Tb	15	3	Ed	3820.25	Cl II	-	[100]	Ks
3825.855	Ce	3	-	-	3823.087	Ce	4 s	4 s	-	3820.13	Hg	-	[2]	Wd
3825.70	A II	-	[10]	Rt	3823.079	Th	20 w	10 w	-	3820.109	W	8	10	-
3825.68	Pr	-	5	-	3823.062	W	-	10	-	3820.088	Ir	4	-	-
3825.66	Eu	5	5	-	3823.06	Eu	4 W	4 W	-	3819.999	Ce	4	3	-
3825.660	Th	8	8	-	3823.04	U	4	10 h	-	3819.981	Cr I	12	-	-
3825.646	Au II	20	30	-	3823.04	Er	9	1	-	3819.965	Nd	15	4	-
3825.480	U	3	5	-	3822.984	Mo	20	15	-	3819.963	V I	60	35	-
3825.461	Mo	3	4	-	3822.965	Sm	25	-	-	3819.925	Hf	12	10	-
3825.409	Cb	1	2	-	3822.954	Cb	2	3	-	3819.910	Co I	20	3	-
3825.406	Fe	2	1	-	3822.930	Ir	2 h	-	Ab	3819.88	Pt	3	-	m

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3819.873	Mo	6	6	-	3817.40	Tm	60	15	Ma	3814.622	Cr	35	30	-
3819.778	Mo	6	6	-	3817.373	Nd	30	25	-	3814.622	Ce	2	2	-
3819.767	Ru I	12	6	-	3817.372	Th	20	10	-	3814.591	Th	15	15	-
3819.761	He I	-	[4]	Pa	3817.269	Ru	50	60	-	3814.585	Ti II	12	35	-
3819.713	Ta	5	3	-	3817.244	Ir I	15	30	-	3814.58	Tb	15	-	Ed
3819.703	Nd	2	2	-	3817.224	La II	-	5	-	3814.57	Dy	4 h	3	m
3819.678	Sm	10	20	-	3817.205	Hf II	5 h	15	-	3814.523	Fe I	80	40	-
3819.66	Eu II	500 wd	500 wd	-	3817.175	Mo	3	5	-	3814.517	Ce	4	3	-
3819.61	Cs	-	[4]	Ba	3817.155	U	8	10	-	3814.49	Mo	4	4	-
3819.606	He I	-	[50]	IMr	3817.11	Kr II	-	[15 whl]	Me	3814.459	Co I	35	-	-
3819.564	Cr I	60	40	-	3817.10	Se	-	[8]	Bt	3814.426	W	2	6	-
3819.534	Ce	2	3	-	3817.01	Eu	5 d	4 d	-	3814.42	Ra II	-	[2000]	Rs
3819.50	Fe	2	1	-	3816.90	Tb	3	-	Ed	3814.259	Os	30	10	-
3819.376	Hf	15	20	-	3816.874	Co I	70	5	-	3814.23	Yb	3	10	-
3819.28	Th	2	5	-	3816.847	Sm	2	-	-	3814.099	Mo	4	3	-
3819.271	Er	12 d	2 w	-	3816.8	Na	-	[3]	Nm	3814.070	U	25	15	-
3819.22	Mo	-	5	-	3816.793	Ce	3	-	-	3814.02	La II	2	2	-
3819.204	Ce	3	3	-	3816.79	Ho	-	4	Ex	3814.02	Lu	2	-	Me
3819.147	Cb	12	10	-	3816.770	Dy	100	50	-	3814.017	Cr	2	4	-
3819.068	Eu	2	1 h	-	3816.753	Mn	60	50	-	3813.981	Gd	100 w	60	-
3819.068	Pr	3	3	-	3816.69	Ba II	-	[5]	Rs	3813.97	Tb	3	3	Ed
3819.05	U	5 h	4	-	3816.66	Tb	5	-	Ex	3813.925	Co I	30 r	-	-
3819.046	Th	-	2	-	3816.640	Gd	10	10	-	3813.902	Mo	2	20	-
3819.04	A II	-	[5]	Rt	3816.634	Cb	2	5 wh	-	3813.890	Fe	50	25	-
3819.033	Ru I	50	30	-	3816.61	Mo	-	20	-	3813.85	Se	-	[2]	Bt
3819.024	Ce II	18	6	-	3816.606	U	10	10	-	3813.822	Sm	5	-	-
3818.858	Cb	8	300	-	3816.582	Th	8	5	-	3813.791	U	20	15	-
3818.837	Nd	4	6	-	3816.549	K II	-	[30]	Dm	3813.786	Ir I	5	-	Ab
3818.810	Ce	2	-	-	3816.473	Co I	60	-	-	3813.684	Dy	20	-	-
3818.76	Dy	5	-	-	3816.470	Rh I	15	15	-	3813.632	Fe	35	15	-
3818.760	Gd	10	15	-	3816.386	W	10	12	-	3813.632	Sm	10	4	-
3818.757	U	8 h	3	-	3816.341	Cb	5	3	-	3813.575	Ce	5	-	-
3818.75	Se II	-	[5]	Bl	3816.340	Fe I	25	20	-	3813.542	Cu I	8	-	-
3818.707	Pr	2	2	-	3816.326	Co I	60	50 r	-	3813.492	V I	50	-	-
3818.704	Er	10 d	1 d	-	3816.310	Ce	3	3	-	3813.472	Cb	3	5 h	-
3818.691	Pt	40	10	-	3816.27	Tb	8	3	Ed	3813.417	Be I	50	-	-
3818.69	Ho	-	6	Ex	3816.197	Yb	12	35	-	3813.394	Ti II	4	20	-
3818.688	Ce II	5	2	-	3816.173	Cr I	30	10	-	3813.355	V I	3	1	-
3818.672	Th	8	5	-	3816.173	Bl	-	25 h	-	3813.323	Er	10 d	1 d	-
3818.663	Mo	8	15	-	3816.168	La II	-	10 h	-	3813.293	Co	2	-	-
3818.641	Os	8	15	-	3816.166	Pr	40	40	-	3813.270	Ti I	12	3	-
3818.62	Fe	2	1	-	3816.16	Dy	4	2	m	3813.24	Ho	15	8 h	Ex
3818.6	Bi II	-	[10]	MI	3816.134	Ce	5	6	-	3813.222	U	6	8	-
3818.52	F II	-	[3]	DI	3816.130	Au	20	40	-	3813.177	Ru	4	3	-
3818.5	Cd I	5	-	Sd	3816.08	Hf	2	-	m	3813.12	Dy	5	-	-
3818.481	U	12	4	-	3816.032	U	1	8	-	3813.07	Eu	2	-	Kn
3818.481	Cr I	50	20	-	3815.842	Fe I	700	700	S	3813.064	Th	15	20	-
3818.44	Ne II	-	[25]	Bn	3815.84	Hg I	-	[2]	Cn	3813.059	Fe I	2	2	-
3818.40	Cl II	-	[30]	Ks	3815.831	Ce	50	5	-	3813.059	Ce	2	-	-
3818.353	Sm	2	3	-	3815.81	Eu	3 wh	3 wh	-	3812.964	Fe I	400	300	-
3818.352	Ru	5	2	-	3815.8	Bi II	-	[300]	MI	3812.96	Er	15	2	-
3818.342	Yt II	30	50	-	3815.779	W	12	5	-	3812.958	Ce	4	4	-
3818.281	Pr	125	100	-	3815.68	Br	-	[15]	Ks	3812.881	Ta	3	3	-
3818.27	N I	-	[5]	Du	3815.66	Re I	25	-	m	3812.86	Zn	-	[2]	Vs
3818.244	V I	20	2	-	3815.516	Ir I	25	3	-	3812.852	Nd	2	1	Kn
3818.240	Ce	3	5	-	3815.514	V I	30	1	-	3812.834	Sm	8	-	-
3818.224	Ti I	20	7	-	3815.511	Cb	20	30	-	3812.826	Re	3	-	-
3818.204	Cb	5 w	5 h	-	3815.50	Eu	20 wh	15 wh	-	3812.73	Tb	8	8	Ed
3818.187	Rh I	50	25	-	3815.49	Er	6 d	-	-	3812.718	Ru I	12	-	-
3818.082	Os	12	15	-	3815.433	Cr	35	12	-	3812.716	U	8	1	-
3818.064	U	8	2 h	-	3815.392	V	1	150 h	-	3812.660	W	5	6	-
3818.04	S	-	[8]	Bl	3815.376	U	2	-	-	3812.657	Ir	3	-	-
3817.975	V I	7	3	-	3815.371	Ce	2	-	-	3812.589	Ce	3	-	-
3817.974	Mo	5	10	-	3815.36	Mo	-	8 l	-	3812.582	U	15	4 h	-
3817.948	Ru	6	3	-	3815.339	Nd	6	4	-	3812.533	Nd	10	15	-
3817.941	Co I	18	4	-	3815.155	W	-	5	-	3812.472	Mo	5	4	-
3817.873	Pr	20	10	-	3815.151	U	1	6	-	3812.470	Co I	100 w	-	-
3817.847	Ce	2	3	-	3815.069	Th	8	8	-	3812.451	Rh I	5	4	-
3817.844	Cr I	30	20	-	3815.055	Mo	5	4	-	3812.32	Ta	2	2	Ks
3817.844	V I	15	6	-	3815.012	Rh	20	20	-	3812.29	Dy	3	-	-
3817.841	Nd	20	10	-	3815.010	Ce	3	-	-	3812.289	Os	20	5	-
3817.727	Th	15	15	-	3814.961	Zr II	5	5	-	3812.276	Mo	-	25	-
3817.706	U	4	10	-	3814.96	Tb	8	-	Ed	3812.260	Re	15	15	-
3817.69	Er	15 w	2 w	-	3814.932	Ce II	2	3	-	3812.250	Cr	40	15	-
3817.69	Eu	4 wh	10 wh	-	3814.890	Nd	10 d	6 d	-	3812.233	U	4	6	-
3817.675	Nd	40	40	-	3814.885	Th	10	5	-	3812.216	Kr I	-	[20]	I
3817.650	Fe	50	15	-	3814.87	Eu	5 wh	5 wh	-	3812.206	Ce	8	2	-
3817.645	Ti I	15	6	-	3814.864	Ti I	30	4	-	3812.18	Yt II	6	3	-
3817.584	Zr II	8	12	-	3814.857	Ru I	20	35	-	3812.16	Se	-	[4]	Bl
3817.561	Re I	40	-	-	3814.785	Fe	10	5	-	3812.068	Sm II	20	20	-
3817.541	K II	-	[40]	Dm	3814.755	Gd	8	10	-	3812.061	Er	9	-	-
3817.54	Dy	2	-	Ed	3814.725	Nd	6	8	-	3812.06	Tb	15	-	Ed
3817.509	Cu I	6	-	-	3814.70	Rn I	-	[12]	Rs	3812.053	Nd	20 d	20 d	-
3817.480	W	18	15	-	3814.65	F II	-	[10]	DI	3812.032	Pr	15 d	9	-
3817.455	Ce	25	2	-	3814.631	Sm II	-	5	-	3812.03	Eu	8 W	5 wh	-

3812.0—3804.6 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3812.021	Gd	200 R	200 h	-	3809.497	Ce	4	2	-	3806.857	Pr	10	4	-
3811.999	U	18	6	-	3809.496	Cr	12	-	-	3806.85	Tb	50	50	Ed
3811.895	Fe I	15	10	-	3809.49	A	-	[25]	Rt	3806.829	Cr	35	35	-
3811.845	Pr	25	10	-	3809.49	Ho	-	4	Ex	3806.796	V I	35	12	-
3811.84	Mo	-	25 d	-	3809.480	Mn	150	-	-	3806.792	Th	10	5	-
3811.79	Ag I	5	-	Bx	3809.258	Ta	2	-	-	3806.770	Sm II	10	8	-
3811.782	Ir I	3	-	-	3809.228	W	25	20	-	3806.76	Eu	2	-	Kn
3811.780	Hf	3	1	-	3809.224	Ce	25	1 h	-	3806.758	Rh I	50	50	-
3811.774	Nd	8	10	-	3809.224	U	15	12	-	3806.719	Mn	50 h	20	-
3811.65	Tb	15	8	Ed	3809.162	Pr	80	40	-	3806.710	Ce	2	-	-
3811.62	Se II	-	[4]	Bl	3809.151	Fe	1	-	-	3806.699	Fe I	200	150	-
3811.620	U	15	-	-	3809.13	Tb	8	-	Ed	3806.636	Ce	3	-	-
3811.610	Ce	5	-	-	3809.099	Eu	10	5	-	3806.633	Cb	3 h	10 h	-
3811.539	Ir	3	-	Ab	3809.096	Mn	8	8	-	3806.60	Si	-	7	Sy
3811.492	Ce	2	-	-	3809.082	Th	10	5	-	3806.573	Ir	8	5	-
3811.476	U	15	-	-	3809.046	Nd	15	20 d	-	3806.540	Nd	20	10 d	Kn
3811.428	Cb	-	5 h	-	3809.044	Fe I	2	-	-	3806.49	Ca	3	2	-
3811.404	Ti I	25	10	-	3809.035	Dy	5	-	-	3806.460	Sm	10	3	-
3811.40	Br	-	[6]	Bl	3808.942	U	20	-	-	3806.447	Ti I	15	7	-
3811.390	Mo	5	5	-	3808.781	La II	-	10	-	3806.42	Tb	15	3	Ed
3811.383	Th	20	10	-	3808.772	Nd	20	12	-	3806.415	Pr	25 d	15	-
3811.348	Pr	10 d	20	-	3808.730	Fe I	100	70	-	3806.394	Ce	12	12	-
3811.34	Nd	20 d	10 d	-	3808.690	Ir	4	-	Ab	3806.38	Hg II	-	[200]	Ps
3811.34	Tb	15	-	Ed	3808.684	Ru	50	30	-	3806.375	Zn II	3	15	-
3811.34	Eu	10 W	-	-	3808.659	Ce	3	3	-	3806.30	Ne II	-	[4]	Bn
3811.339	Gd	5 h	-	-	3808.623	Mo	5	5	-	3806.294	Ir	2	-	Ab
3811.324	Ce	4	6	-	3808.61	A	-	[10]	Rt	3806.280	Dy	25	80	-
3811.32	V I	3	-	Me	3808.521	V I	50	30	-	3806.262	U	3 h	3	-
3811.310	Ti	15	7	-	3808.463	Sm II	7	7	-	3806.219	Fe	40	20	-
3811.14	Bi II	-	[150]	Om	3808.392	Ce II	3	2 h	-	3806.196	Cb	8	10	-
3811.073	Nd	10	10	-	3808.287	Fe	4	1	-	3806.17	Kr II	-	[8 whl]	Me
3811.067	Co I	30	-	-	3808.251	Nd	4	2	-	3806.16	Eu	6 W	5 W	-
3811.063	Th	5	3	-	3808.219	Re	15	-	-	3806.125	Pr	8	4	-
3811.05	Xe II	-	[20]	Hu	3808.205	Zr	30	25	-	3806.095	Ir	4	-	Ab
3811.032	Cb	10	12	-	3808.20	U	6	8	-	3806.074	Hf II	5	20	-
3810.976	Sm	8	1 h	-	3808.161	Eu	6	5	-	3806.044	Ti I	2	-	-
3810.93	U	8	12	-	3808.149	Er	25	4	-	3806.031	Sm	2	2	-
3810.902	Ce	5	-	-	3808.146	Th	10	10	-	3805.993	Mo	10	10	-
3810.86	Ag I	100 wh	10 h	-	3808.143	Pr	5	5	-	3805.930	Mo	5	5	-
3810.816	Mo	4	4	-	3808.14	Tb	8	-	Ed	3805.917	Rh I	25	50	-
3810.798	W	10 s	10 s	-	3808.121	Ce I, II	35	35	-	3805.90	F II	-	[15]	Di
3810.787	Er	10	1	-	3808.11	V I	3	-	Me	3805.829	Ce	2	2	-
3810.761	Fe	70	25	-	3808.11	In II	-	[2]	Ps	3805.825	U	1	2	-
3810.76	Eu	3	3	-	3808.106	Co I	200 w	7	-	3805.824	Th	20	15	-
3810.73	Tm	30	10	Me	3808.075	I I	-	[40]	Ke	3805.81	Eu	7 W	5 W	-
3810.70	Ho	20	40	Ex	3808.03	S	-	[7]	Bl	3805.769	Co I	20	-	-
3810.693	Mn	15	15	-	3807.943	Er	18	3	-	3805.765	He I	-	[3]	Ps
3810.617	Th	8	5	-	3807.935	Nd	30	20	-	3805.717	U	-	6	-
3810.611	Hf II	15	15	-	3807.926	Cr I	25	12	-	3805.693	Ru	4	-	-
3810.608	Ir I	3	2	-	3807.923	Sm II	15	2	-	3805.626	Sm II	5	7	-
3810.57	Tb	8	-	Ed	3807.89	Eu	5	4	Kn	3805.547	Nd	8	8	-
3810.491	Cb	30	50	-	3807.875	Th	10	10	-	3805.537	Ce	3	3	-
3810.480	Nd	20 d	20	-	3807.87	Pd I	5 h	-	Sh	3805.526	Gd	10	10	-
3810.433	Sm	5	10	-	3807.87	U	2 d	4 d	-	3805.508	Pr	10	8	-
3810.387	Ir I	10	4	-	3807.855	W	3	5	-	3805.477	Ti I	8	3	-
3810.385	W	15	15	-	3807.854	Mo	4	4	-	3805.434	Ru I	10	5	-
3810.330	Er	9	1	-	3807.803	Nd	4	2	-	3805.42	Mo	-	5	-
3810.245	Ce	3	1	-	3807.761	Ti I	5	-	-	3805.417	Re	2 h	-	-
3810.192	U	3	8	-	3807.742	Re I	20	-	-	3805.412	Cs II	-	[2]	-
3810.129	Mo	4	5	-	3807.72	Tm	10	1	Me	3805.359	Nd	50	30	-
3810.103	Re I	20	-	-	3807.691	Ce	5	2	-	3805.345	Fe	400	300	S
3810.10	Cl II	-	[30]	Ks	3807.654	Mo	3	2	-	3805.339	Ce	2	-	-
3810.099	Ce	6	-	-	3807.65	Tb	8	-	Ed	3805.30	Cu I	20	2 h	m
3809.962	Pr	20 r	10 r	-	3807.636	W	3	5	-	3805.24	Cl II	-	[75]	Ks
3809.953	Sm	4	-	-	3807.612	Pr	8 d	2	-	3805.187	Sm II	6	1	-
3809.923	U	15	2 h	-	3807.61	U	-	3	-	3805.118	Ti I	8	1	-
3809.90	Nd	20	20	-	3807.59	Eu	20 W	15 W	-	3805.107	Gd	10	10	-
3809.882	Sm II	10	8	-	3807.54	Yb	3	15	Me	3805.096	Cs II	-	[25]	Sv
3809.88	Se II	-	[2]	Bt	3807.537	Fe I	150	100	-	3805.058	U	1	4	-
3809.853	W	6	7	-	3807.505	V I	80	50	-	3804.959	Ce	2	-	-
3809.84	Xe I	-	[30]	Me	3807.45	Dy	2 h	-	Ed	3804.952	W	7	6	-
3809.84	Dy	3	2	Ed	3807.436	W	-	6	-	3804.916	V I	25	9	-
3809.839	Th	8	5	-	3807.403	Zr II	2	1	-	3804.874	U	12 r	4	-
3809.743	Sm II	10	10	-	3807.38	Sr I	50	-	FI	3804.852	Pr	25 w	50 w	-
3809.74	Eu	7 W	5 W	-	3807.29	Xe II	-	[8]	Hu	3804.798	Cr I	100	30	-
3809.73	Tb	8	-	Ed	3807.267	Ce	3	-	-	3804.778	Er	10	1	-
3809.718	Ta	4	3 h	-	3807.227	Ti	8	-	-	3804.768	Nd	10	10	-
3809.691	Zr I	25	-	-	3807.227	Nd	15	20	-	3804.76	La II	-	2 h	-
3809.64	I	-	[2]	Ke	3807.199	U	4	4	-	3804.757	Mn	5	5	-
3809.6	Rb	-	[2]	Dr	3807.144	Ni I	800 W	40 h	-	3804.736	Cb	20	50	-
3809.597	V I	70	40	-	3807.082	Er	4	-	-	3804.735	Gd	8	-	-
3809.592	Mn	150	150	-	3807.008	Mo	1	20 w	-	3804.71	Tb	15	-	Ed
3809.574	Fe	15	5	-	3807.003	Ir I	3	-	Ab	3804.698	Th	10	8	-
3809.51	Cl II	-	[40]	Ks	3806.91	Pt II	-	5	Sh	3804.697	Ce	3	3	-
3809.498	Rh I	3	3	-	3806.87	Ga	-	4	KI	3804.67	Kr II	-	[30 hl]	Me

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3804.589	V I	5	2	-	-	3801.801	Ta	3	-	-	-	3799.546	Sm II	30	10	-	-
3804.55	W	-	8 h	-	-	3801.80	Tb	15	-	-	Ed	3799.52	Hf II	-	4	-	Me
3804.529	Hf	3	2	-	-	3801.682	Fe	50	25	-	-	3799.50	Eu	18 wd	-	-	Kn
3804.520	Mo	20	20	-	-	3801.658	Hg I	15	2	-	-	3799.488	Cb	5	2	-	-
3804.26	Eu	10 W	10 W	-	-	3801.633	Mn II	-	-	[6]	Cz	3799.423	In II	-	-	[10]	Ps
3804.204	Cb	5	3 h	-	Me	3801.61	Eu	7 W	10 W	-	-	3799.39	A	-	-	[15]	Rt
3804.165	Hf	5	4	-	-	3801.604	Os	20	5	-	-	3799.371	In II	-	-	[25]	Ps
3804.156	Ce	4	2	-	-	3801.560	Ti	7	3	-	-	3799.356	Pr	6	3	-	-
3804.152	Dy	20	-	-	-	3801.529	Ce	25	3	-	-	3799.347	Ru I	70 r	100	-	-
3804.103	Th	-	2	-	-	3801.524	W	9	7	-	-	3799.314	In II	-	-	[10]	Ps
3804.102	Nd	15 d	10 d	-	-	3801.5	In II	-	-	[50]	Ps	3799.311	Rh I	25	100	-	-
3804.080	W	7	5	-	-	3801.450	I	-	-	[5]	Ke	3799.269	V I	10	7	-	-
3804.013	Fe I	40	10	-	-	3801.39	Xe I	-	-	[30]	Me	3799.259	Mn	50	50	-	-
3804.00	Au II	25	150	-	-	3801.373	Nd	60	40	-	-	3799.236	Nd	10 d	10 d	-	-
3803.987	Th	8	5	-	-	3801.373	U	3 h	5	-	-	3799.218	Th	10	5	-	-
3803.940	Sm	15	2	-	-	3801.368	Th	10	8	-	-	3799.21	S	-	-	[8]	Ms
3803.902	V I	10	3	-	-	3801.36	Eu	9 W	10 W	-	-	3799.204	In II	-	-	[18]	Ps
3803.882	Cb	30	20	-	-	3801.348	Pr	30 d	9	-	-	3799.202	U	6	12	-	-
3803.868	U	2	-	-	-	3801.334	Gd	15	15	-	-	3799.190	Pd I	200 w	150	-	-
3803.841	Ce	6	-	-	-	3801.33	Fe	1	-	-	-	3799.15	Tb	8	-	-	Ed
3803.799	Mo	3	5	-	-	3801.30	Ho	6	4 h	-	Ex	3799.118	In II	-	-	[10]	Ps
3803.784	V I	10	3	-	-	3801.298	Cb	5	8	-	-	3799.097	Ce	3	-	-	-
3803.68	W	-	15 w	-	-	3801.200	Cr	35 h	3 h	-	-	3799.06	Ho	-	-	4 h	Ex
3803.59	Dy	2	-	-	m	3801.158	V I	3	1	-	-	3799.055	In II	-	-	[10]	Ps
3803.49	I	-	-	[5 d]	Bl	3801.154	Cb	3	20	-	-	3799.038	Ce II	4	-	-	-
3803.474	V I	50	40	-	-	3801.148	U	20	-	-	-	3799.01	Eu II	100 wh	-	-	-
3803.474	Nd	20	20	-	-	3801.147	Ta	1	10	-	-	3799.002	Zn I	5	-	-	Hf
3803.447	Ir	2	-	-	Ab	3801.118	Nd	15	15	-	-	3798.95	Tb	8	8	-	Ed
3803.41	Mo	-	20 w	-	-	3801.09	F II	-	-	[6]	Di	3798.922	W	7	10	-	-
3803.350	U	8	8	-	-	3801.084	Ti I	15	5	-	-	3798.901	Ru I	70	100	-	-
3803.32	W	-	6 h	-	-	3801.05	Pt	-	4	-	Ex	3798.837	U	15	1	-	-
3803.197	Ru	10	8	-	-	3800.996	Sn	200 h	150 h	-	Hf	3798.80	Cl II	-	-	[50]	Ke
3803.19	A II	-	-	[15]	Rt	3800.99	Xe	-	-	[10]	Hu	3798.76	Tm	20	10	-	Me
3803.13	O II	-	-	[20 I]	Mh	3800.948	Re	3	-	-	-	3798.71	Eu	2 wh	-	-	-
3803.123	Er	8 d	1 d	-	-	3800.942	Mo	1	4	-	-	3798.666	Ir I	5	-	-	Ab
3803.110	Pr	50 d	20	-	-	3800.941	Cb	10	8	-	-	3798.662	Hf	5	3	-	-
3803.099	Eu	9 w	10 w	-	-	3800.890	Sm II	20	25	-	-	3798.661	V I	7	5	-	-
3803.097	Ce II	35	5	-	-	3800.883	Yt II	2	5 h	-	-	3798.65	Dy	2	-	-	m
3803.093	U	1	8	-	-	3800.783	Sm	5	2	-	-	3798.65	Er	4	-	-	-
3803.090	Sm	10	3	-	-	3800.771	U	-	2	-	-	3798.624	Ce	3	3	-	-
3803.087	Gd	5	-	-	-	3800.703	Zr II	5	1	-	-	3798.59	Tb	15	-	-	Ed
3803.08	Tb	15	-	-	Ed	3800.67	Lu	5	-	-	Me	3798.55	Tm	15	-	-	Me
3803.077	Th	15	15	-	-	3800.67	Ho	-	4 h	-	Ex	3798.513	Fe I	400	300	-	S
3803.07	Ho	-	4 h	-	Ex	3800.619	Nd	20	6	-	-	3798.51	Ce	3	3	-	-
3802.986	Cr	2 h	-	-	-	3800.605	Th	2	2	-	-	3798.46	F II	-	-	[6]	Di
3802.982	Ir	2	-	-	Ab	3800.552	Mn	60	60	-	-	3798.44	Yb	4	-	-	-
3802.928	W	7	6	-	-	3800.55	Eu	10 W	10 W	-	-	3798.314	Ti I	10	6	-	-
3802.923	Cb	50	50	-	-	3800.544	Kr I	-	-	[30]	I	3798.28	Br	-	-	[6]	Ks
3802.883	V I	20	8	-	-	3800.503	Pt	4	-	-	-	3798.272	Ir	8	-	-	-
3802.856	U	3	5	-	-	3800.502	Cu I	20	2 h	-	-	3798.25	Er	5	-	-	-
3802.802	Ce	3	4	-	-	3800.437	Os	50	15	-	-	3798.259	U	2	8	-	-
3802.791	Th	10	5	-	-	3800.39	Hf II	20	12	-	Me	3798.252	Mo I	1000 R	1000 R	-	-
3802.778	Ir I	3	-	-	Ab	3800.378	Th	5	2	-	-	3798.25	Ho	-	4	-	Ex
3802.763	Pr	30 d	15	-	-	3800.368	Sm II	20	-	-	-	3798.238	Ce	2	-	-	-
3802.749	Eu	5 w	5 w	-	-	3800.324	Ce II	15	3	-	-	3798.19	La II	-	2	-	Me
3802.68	Dy	4	2	-	m	3800.303	Pr	100	50	-	-	3798.17	Yb	4	-	-	-
3802.676	Ir	10	1 h	-	Ab	3800.278	U	1	2	-	-	3798.121	Cb	50	80	-	-
3802.638	Cb	3	2	-	Me	3800.261	Ru I	12	40	-	-	3798.103	Th	5	1	-	-
3802.62	Lu	3	-	-	Me	3800.240	Mn II	-	-	[4]	Cz	3798.08	Ce	2	2	-	-
3802.612	Os	5 h	5	-	-	3800.21	Pt	3	-	-	Ex	3798.059	Ir	6	-	-	-
3802.592	Ce	3	2	-	-	3800.197	Cb	3	3	-	Me	3798.052	Ru I	30	40	-	-
3802.555	Cb	2	1	-	Me	3800.141	K II	-	-	[30]	Dm	3797.949	Fe I	4	2	-	-
3802.525	Pd	-	3	-	-	3800.123	Ir	150	100	-	-	3797.93	Tb	15	-	-	Ed
3802.417	Sm	10	-	-	-	3800.090	Mo	2	3	-	-	3797.924	Ir	2	-	-	-
3802.340	Ce	3	-	-	-	3800.042	Sm	8	5 W	-	-	3797.923	Hf II	25	25	-	-
3802.299	Pr	10	2 h	-	-	3800.04	Tb	8	-	-	Ed	3797.91	Th	2	5	-	-
3802.285	Fe	25	10	-	-	3800.033	Th	10 w	5 w	-	-	3797.910	H I	-	-	[20]	Rk
3802.228	Eu	4	3	-	-	3800.029	Sc	5	12	-	-	3797.908	Ce	-	-	[4]	Sv
3802.17	Tb	30	3	-	Ed	3800.028	Yt	25	5	-	-	3797.89	Nd	20 d	10 d	-	-
3802.170	Mo	5	5	-	-	3800.026	Nd	30 d	20	-	-	3797.832	Cu II	-	2 h	-	Sh
3802.150	Th	8	8	-	-	3800.02	Ne II	-	-	[18]	Bn	3797.773	U	10	1	-	-
3802.07	P	-	-	[100]	Gu	3799.991	Ta	2	2 h	-	-	3797.76	Dy	4	-	-	m
3802.02	Ta	2 h	-	-	Ks	3799.93	Dy	2	-	-	m	3797.727	Sm	25	5	-	-
3801.985	Au I	2	-	-	-	3799.93	Ca	2	2	-	-	3797.727	Sm	4	-	-	-
3801.985	Fe I	25	5	-	-	3799.912	V I	60	50	-	-	3797.716	Or I	100	20	-	-
3801.955	U	15	-	-	-	3799.903	Ce	3	3	-	-	3797.591	Re I	40	-	-	-
3801.927	Th	5	5	-	-	3799.87	Pt	5	-	-	Ex	3797.520	U	-	3	-	-
3801.925	Rb II	-	-	[20]	Rr	3799.819	I	-	-	[7]	Ke	3797.517	Fe	300	200	-	S
3801.924	Ce	4	-	-	-	3799.713	Ce	4	2	-	-	3797.42	Sn	-	3	-	Ar
3801.921	W	9	10	-	-	3799.679	Pr	50	25	-	-	3797.403	Ta	6	3	-	-
3801.907	Mn	20	20	-	-	3799.66	Th	2	2	-	-	3797.322	Ce	2	-	-	-
3801.90	Xe I	-	-	[3]	Me	3799.58	As II	-	10	-	Ro	3797.300	Mo	5	5	-	-
3801.88	Dy	8	2	-	Ed	3799.552	U	1	4	-	-	3797.278	Sm II	15	-	-	-
3801.837	Mo	20	25	-	-	3799.549	Fe I	400	300	-	S	3797.276	Rb II	-	-	[2]	Rr
3801.807	Fe	7	3	-	-	3799.547	Ce	3	4	-	-	3797.231	Pr	15	8	-	-

3797.1—3790.7 Å.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3797.170	Rb II	-	[2]	Rr	3795.013	Ce	6	2	-	3792.920	Th	10	5	-
3797.142	U	1	3	-	3795.004	Fe I	500	400	S	3792.915	Er	8	-	-
3797.126	Cr I	50	30	-	3794.964	V I	50 h	50 h	-	3792.833	Fe I	10	3	-
3797.065	Er	2	-	-	3794.947	Pr	2	3	-	3792.812	Er	8	1	-
3797.05	Sb II	1	4	-	3794.924	Ru	20	30	-	3792.809	Ce	4	3	-
3797.031	Mo	5	5	-	3794.794	Eu	4	3	-	3792.8	Bi	-	500 h	Wt
3797.0	Bi II	-	5	MI	3794.787	Sm	-	2	-	3792.79	Cb	-	20 h	Me
3796.98	Tb	15	-	Ed	3794.779	Er	2	-	-	3792.769	W	15	15	-
3796.952	Th	10	5	-	3794.773	La II	400	200	-	3792.745	Ce	2	-	-
3796.947	W	5	4	-	3794.771	Ba	8	-	Sz	3792.69	Tb	8	-	Ed
3796.925	Pr	40 d	20 d	-	3794.771	Pr	4	2	-	3792.641	Th	10	5	-
3796.892	Nd	20 d	10 d	-	3794.764	Ti I	7	-	-	3792.629	U	8	4	-
3796.885	Ti II	12	15	-	3794.722	Li I	60	-	-	3792.60	Sm	25 w	3 h	-
3796.884	Kr I	-	[20]	I	3794.689	Nd	10	2	-	3792.56	Yt II	5	3	-
3796.849	Cb	10 w	15 w	-	3794.680	Ce	5	-	-	3792.55	Nd	20 d	10 d	-
3796.845	U	12	15	-	3794.662	Os	40	10	-	3792.524	Pr	100	8	-
3796.84	Dy	2 h	1 h	m	3794.608	Cr I	50	30	-	3792.5	B II	-	[500]	MI
3796.823	Rb II	-	[40]	Rr	3794.60	F II	-	[3]	DI	3792.46	S II	-	[35]	Bt
3796.790	Ir I	4	-	Ab	3794.48	O II	-	[10]	FI	3792.435	Pr	4	3	-
3796.738	Th	3	-	-	3794.471	Cb	5	5	-	3792.426	Cr	2	1	-
3796.73	Ho	20	40	Ex	3794.432	Mo	5	10	-	3792.410	U	10	4	-
3796.69	Eu	2 W	-	-	3794.416	U	-	3	-	3792.405	Zr I	9	2	-
3796.674	Ce	6	-	-	3794.38	Er	5	1	-	3792.40	F II	-	[10]	DI
3796.60	A II	-	[5]	Rt	3794.379	Pr	50 d	25 d	-	3792.396	Gd	20	25	-
3796.600	Re I	60	-	-	3794.370	Eu	8 w	5 w	-	3792.377	Th	5	1	-
3796.591	Cb	5	5	-	3794.358	V	1	25 h	-	3792.337	Ni I	25	5	-
3796.570	Mo	-	20	-	3794.347	Sm	30 w	2 h	-	3793.326	Ce II	20	2 h	-
3796.536	U	10	15	-	3794.345	W	10	10	-	3792.321	Mo	4	5	-
3796.484	Zr II	8	15	-	3794.341	Th	10	10	-	3792.317	Nd	6	1	-
3796.470	V I	30	12	-	3794.340	Fe	80	50	-	3792.255	Ir	8	-	Ab
3796.440	Cb	15	15	-	3794.269	Ru	3	8 w	-	3792.182	Rh I	10	4	-
3796.432	Ce	2	-	-	3794.23	Tb	30	-	Ed	3792.18	Tb	15	8	Ed
3796.413	U	6	4	-	3794.208	Ce	4	-	-	3792.163	Pr	9	5	-
3796.393	Gd	150 w	150	-	3794.158	Eu	2	-	-	3792.160	Fe I	40	20	-
3796.393	Rb II	-	[2]	Rr	3794.154	Th	10	10	-	3792.137	Cr I	60	40	-
3796.313	Eu	5 w	10 w	-	3794.056	Ir	30	6	-	3792.094	Mo	1	15	-
3796.30	Xe I	-	[40]	Me	3794.04	Br I	-	[6]	Ks	3792.023	Sm II	25	6	-
3796.292	Pr	4	3	-	3793.972	U	3	8	-	3792.015	Cb	5 W	3 W	-
3796.285	W	7	6	-	3793.969	Sm II	10	30	-	3792.015	Ta	50	10	-
3796.223	Ir	2	-	-	3793.951	Ir	20	-	-	3791.981	Th	3	3	-
3796.208	Ta	-	50	-	3793.95	Ti II	-	[25]	El	3791.967	Ir I	4	-	Ab
3796.204	U	8	12	-	3793.91	Zn II	10	-	Vs	3791.964	Ce	4	-	-
3796.20	Tb	15	-	Ed	3793.909	Os I	125	300	-	3791.845	Er	18	6	-
3796.184	Th	10	8	-	3793.879	Cr I	50	30	-	3791.843	U	3	3	-
3796.18	Si	-	7	Sy	3793.877	Fe I	25	10	-	3791.82	Dy	6	4	Ed
3796.16	Eu	4 w	8 w	-	3793.857	Ce	6	-	-	3791.772	W	4	1	-
3796.15	Sm	8 d	2 d	-	3793.85	Eu	18 w	5	Kn	3791.74	Yb	4	6	-
3796.112	Ca	2	2	-	3793.792	Ir	30	10	-	3791.73	Fe	5 h	2 h	-
3796.043	Mo	10	5	-	3793.789	Pr	40 d	30 d	-	3791.689	Ce	15	-	-
3796.038	Nd	15	1	-	3793.786	Th	20	8	-	3791.63	Eu	2 W	-	-
3796.00	Fe I	1	-	-	3793.786	Er	10	1	-	3791.60	W	-	5	-
3795.95	U	6	1	-	3793.75	Cl II	-	[25]	Ks	3791.56	Ti II	-	[6]	El
3795.95	Eu	4	-	Kn	3793.73	Cb	4 w	2	-	3791.507	Fe I	7	2	-
3795.95	Xe I	-	[3]	Me	3793.7	bh Ca	4	-	L	3791.503	Nd	20	10	-
3795.90	Au I	20	3 h	MI	3793.681	Ti I	8	-	-	3791.49	Eu II	5 W	-	-
3795.895	Ti I	15	6	-	3793.640	Nd	20 d	6 d	Kn	3791.46	Cl	-	[3]	Bl
3795.801	Nd	20	15	-	3793.63	Se II	-	[25]	Bl	3791.447	Ob	3	3	-
3795.800	Re	40 W	-	-	3793.621	Mo	5	5	-	3791.41	Mo	-	10 h	-
3795.765	Pr	30 d	20 d	-	3793.614	V I	35	15	-	3791.400	Zr I	25	6	-
3795.765	Tm	250	150	Me	3793.608	Ni I	50	-	-	3791.376	Cr I	80	40	-
3795.751	Th	20 w	10 w	-	3793.60	P II	-	[30]	Gu	3791.339	U	10	1	-
3795.667	Os	40	12	-	3793.576	U	10	12	-	3791.326	V I	20	4	-
3795.63	Ca I	3	-	-	3793.565	Dy	4	2	-	3791.302	Th	8	8	-
3795.608	U	1	6	-	3793.55	Tb	15	15	Ed	3791.275	Sm	10	6	-
3795.59	Mo	-	20 d	-	3793.522	Ce	5	-	-	3791.243	Nd	10	4	Kn
3795.570	Ce	4	-	-	3793.488	Th	20 w	8	-	3791.223	Ce	3	2	-
3795.543	Cb	15 h	-	-	3793.484	Fe I	10	5	-	3791.207	Cb	80	80	-
3795.542	Cb	10	20 h	-	3793.425	Ce	3	1	-	3791.20	Fe	2	-	-
3795.532	Fe	2	1	-	3793.42	I	-	[3]	Ke	3791.135	Gd	25	25	-
3795.454	Nd	6	10	-	3793.372	Hf II	10	20	-	3791.13	Si	-	5	Sy
3795.387	Th	20	10	-	3793.360	Fe I	5	2	-	3791.091	U	2	8	-
3795.379	Er	9	-	-	3793.358	Ca	-	2	-	3791.062	Zr I	5	5	-
3795.340	Pr	25 d	25 d	-	3793.332	Sm	20	1	-	3791.00	Ho	-	6	Ex
3795.34	Eu	9 W	5 W	-	3793.323	W	6	5	-	3790.999	Ce	2	-	-
3795.29	Er	18 d	1 d	-	3793.289	Cr I	50	30	-	3790.928	Ir	2	-	-
3795.272	In II	-	[10]	Ps	3793.282	U	20	12	-	3790.878	Ce	4	3	-
3795.256	Ce	5	3	-	3793.24	Lu	4	-	Me	3790.851	Th	10	5	-
3795.211	In II	-	[50]	Ps	3793.217	Rh I	200	60	-	3790.843	U	-	3	-
3795.185	Ta	-	30	-	3793.160	Sm	3	-	Kn	3790.840	Nd	20 d	10 d	-
3795.175	Ru I	12	6	-	3793.104	U	12	18	-	3790.836	Er	12	1	-
3795.17	Tm	40	6	Me	3793.02	Eu	5 W	-	-	3790.823	Pr	15	5	-
3795.166	In II	-	[18]	Ps	3793.0	Bj II	-	[25]	MI	3790.822	La II	400	300	-
3795.132	U	8 h	8	-	3792.995	Ti	8	-	-	3790.81	Tb	6	-	Ed
3795.09	P II	-	[30]	Gu	3792.95	Ho	-	4 h	Ex	3790.808	Ce	8	4	-
3795.03	Eu	10 W	-	-	3792.933	Pr	12	4	-	3790.779	Sm	5	2	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3790.760	Fe I	10	3	—	—	3788.130	Sm II	25	10	—	—	3785.852	Th	5	—	—	—
3790.731	Os	100	20	—	—	3788.11	Re	3	—	—	—	3785.80	Eu	10 wh	10 wh	—	—
3790.71	Eu	10	2	—	Kn	3788.10	Ho	—	4	—	Ex	3785.76	Ca	2	2 h	—	—
3790.709	Ir I	3	—	—	Ab	3788.06	P II	—	—	[15 h]	Gu	3785.713	Fe	10	4	—	—
3790.664	Fe I	2	1	—	—	3788.058	Pr	6	3	—	—	3785.652	Th	15	15	—	—
3790.644	Nd	10	—	—	—	3788.036	U	2	8	—	—	3785.63	W	—	10	—	—
3790.621	Gd	8	15	—	—	3787.910	Er	15	2	—	—	3785.62	Yt	3	3	—	Me
3790.595	Pr	12	6	—	—	3787.906	Ce	15	2	—	—	3785.564	Ce	2	2	—	—
3790.537	Er	12	5 wh	—	—	3787.883	Fe I	500	300	—	S	3785.514	Mo	5	5	—	—
3790.537	Th	10	5	—	—	3787.644	Nd	6	4	—	—	3785.498	Pr	50	20	—	—
3790.527	Ir	50	—	—	—	3787.62	Tb	8	8	—	Ed	3785.47	Eu	25 W	10 Wh	—	—
3790.526	Zr	3	3	—	—	3787.572	Ce	4	—	—	—	3785.460	Hf	20	15	—	—
3790.513	Ru I	70	150	—	—	3787.56	Gd	25	25	—	—	3785.424	Dy	7	3	—	—
3790.50	Eu	8 W	5 W	—	—	3787.540	V I	30	1	—	—	3785.424	Ca II	—	[20]	—	Sv
3790.469	V I	12	7	—	—	3787.526	Re I	80	—	—	—	3785.421	Mn	4	4	—	—
3790.454	Cr I	50	15	—	—	3787.519	Nd	10	6	—	—	3785.42	Ho	—	4 h	—	Ex
3790.335	Ce II	4	—	—	—	3787.504	Th	10	5	—	—	3785.38	Tb	15	8	—	Ed
3790.333	U	6	6	—	—	3787.483	Cb	5	5	—	—	3785.356	Er	15 d	1 d	—	—
3790.324	V I	40	12	—	—	3787.462	Ce	3	1	—	—	3785.35	U	—	15 h	—	—
3790.300	Ir I	3	—	—	—	3787.425	Fe	2	—	—	—	3785.350	Sm	30	8	—	—
3790.23	Hg	—	[2 h]	—	Cn	3787.42	Er	3 d	1 d	—	—	3785.335	Th	10	5	—	—
3790.228	Cr I	30	10	—	—	3787.372	Hf	3	2	—	—	3785.265	Ta	8	2	—	—
3790.216	U	1	6	—	—	3787.356	Sm	10	—	—	—	3785.249	Ce	2	2	—	—
3790.215	Mn	100	125	—	—	3787.32	Xe II	—	[2]	—	Hu	3785.175	U	6	2	—	—
3790.152	Cb	100 r	50 r	—	—	3787.280	Cb	4 h	3 h	—	Me	3785.105	W	4	3	—	—
3790.14	Os I	80	30	—	m	3787.276	Ir	4	—	—	—	3785.094	Nd	10 d	10	—	—
3790.095	Fe I	200	100	—	S	3787.27	Er	25 d	5 d	—	—	3785.071	Pr	3	2	—	—
3790.086	Ce	2 h	—	—	—	3787.270	Dy	6	5	—	—	3785.06	Ho	—	4 h	—	Ex
3790.07	Rn I	—	[12]	—	Rs	3787.239	V	2	20	—	—	3785.032	Mo	8	10	—	—
3789.991	Pr	25	20	—	—	3787.235	Ba I	4	4	—	—	3785.021	Ce	12	2	—	—
3789.978	Th	2	5 h	—	—	3787.233	U	1	10	—	—	3784.929	Ir	3	—	—	Ab
3789.92	Tb	15	—	—	Ed	3787.22	Tb	30	8	—	Ed	3784.886	He I	—	[2]	—	Ps
3789.919	Er	8	—	—	—	3787.213	Re	10	—	—	—	3784.881	Cb	1	10	—	—
3789.913	Sm	3	1	—	—	3787.201	Sm II	100	35	—	—	3784.871	Zr I	2	—	—	—
3789.888	U	2	6	—	—	3787.191	Th	40 w	20 w	—	—	3784.850	Nd	20	20	—	—
3789.837	Ce	3	3	—	—	3787.19	Eu	9 W	5 W	—	—	3784.797	La II	5	2	—	—
3789.818	Hg	—	[2 h]	—	St	3787.18	As II	—	15	—	Fl	3784.737	Ru I	4	—	—	—
3789.810	Fe	4	1 h	—	—	3787.167	Fe	25	15	—	—	3784.717	Ir	2 h	3 h	—	Ab
3789.77	W	—	12	—	—	3787.159	Ce	3	5	—	—	3784.707	U	2	6	—	—
3789.723	Cr I	50	10	—	—	3787.158	Yt I	5	—	—	—	3784.674	V I	15	5	—	—
3789.72	Ba I	3	—	—	Sd	3787.158	Nd	60 d	50	—	—	3784.65	Dy	6	2	—	m
3789.716	Pr	10	—	—	Kn	3787.154	Sc	30	10	—	—	3784.352	Ce	4	3	—	—
3789.68	Se	—	[5]	—	Bt	3787.146	Ta	—	20 w	—	—	3784.348	Zr	6	4	—	—
3789.68	Tb	8	3	—	Ed	3787.145	V I	25	7 h	—	—	3784.310	Ta	9 d	3 d	—	—
3789.64	Ca	3	2	—	Ad	3787.062	Cb	30	30	—	—	3784.254	Pr	150	50 w	—	—
3789.603	U	4	12	—	—	3787.011	Ce	3	—	—	—	3784.250	Nd	25	25	—	—
3789.571	Fe I	1	—	—	—	3786.975	Eu	2	—	—	—	3784.23	Eu	10 W	10 W	—	—
3789.495	Cb	10	10	—	—	3786.895	Nd	10	6	—	—	3784.177	Re	20	—	—	—
3789.474	Ir I	10	2 h	—	—	3786.884	Th	15	15	—	—	3784.0	Pb II	—	[10]	—	Ea
3789.473	Ce	5	—	—	—	3786.882	Pr	30 d	15	—	—	3783.985	Pr	3	—	—	—
3789.438	Fe	2	1	—	—	3786.85	Ho	—	4	—	Ex	3783.96	Dy	6	4	—	Ed
3789.295	Ti I	50	15	—	—	3786.839	Er	20	7	—	—	3783.87	Eu	10 W	5 W	—	—
3789.214	U	—	5	—	—	3786.83	Eu	5 W	10 W	—	—	3783.859	Pr	100 d	30 d	—	—
3789.177	Fe	80	50	—	—	3786.830	U	12	2 h	—	—	3783.857	Er	10 d	1 d	—	—
3789.170	Eu	6	4	—	—	3786.69	P II	—	[15]	—	Gu	3783.85	Tb	8	—	—	Ed
3789.116	Th	20	20	—	—	3786.679	Fe I	125	50	—	—	3783.840	U	20	25	—	—
3789.106	Os	30	12	—	—	3786.632	Ce II	10 s	3	—	—	3783.839	Cb	15	20	—	—
3789.039	Pr	15	9	—	—	3786.61	Se	—	[12]	—	Bt	3783.821	Th	15	5	—	—
3789.00	Tb	8	3	—	Ed	3786.606	Zr	8	—	—	—	3783.815	Ce	2	4	—	—
3788.967	Nd	15 d	10 d	—	—	3786.574	U	5	10	—	—	3783.811	Gd	5	5	—	—
3788.930	Pr	50 d	25 d	—	—	3786.532	Ce	3	—	—	—	3783.806	Sm	50 d	10 d	—	—
3788.864	Cr I	60	10	—	—	3786.40	A	—	[15]	—	Rt	3783.777	Nd	20 d	20 d	—	—
3788.804	Ti I	7	2	—	—	3786.378	W	10	10	—	—	3783.774	Ta	2	1	—	—
3788.76	Eu	15 w	10 w	—	—	3786.361	Mo	2	125	—	—	3783.74	Sn	—	2 h	—	—
3788.753	Ce	15	3 h	—	—	3786.32	Eu	4	2	—	Kn	3783.730	W	10	12	—	—
3788.748	Ta	10	3	—	—	3786.268	Ti I	6	—	—	—	3783.728	Co I	5 h	3	—	—
3788.736	Ir	2 h	—	—	—	3786.261	Cu II	—	2 h	—	Sh	3783.658	Os	20	10	—	—
3788.697	Yt II	30	30	—	—	3786.243	Pb II	—	10 h	—	Kl	3783.630	U	2	5	—	—
3788.684	Cb	10 W	5 h	—	—	3786.222	Cb	10	8	—	—	3783.608	Dy	8	3	—	—
3788.595	U	3 h	1 h	—	—	3786.212	Cr	5	2	—	—	3783.579	Ce II	8	3	—	—
3788.57	Rh I	2	—	—	—	3786.20	Dy	20	15	—	m	3783.56	Tm	30	15	—	Me
3788.493	Pr	2	2	—	—	3786.18	Lu	4	—	—	Me	3783.544	Er	10	1	—	—
3788.48	Nd	20 d	6 d	—	—	3786.177	Er	20	12	—	—	3783.54	Tb	15	8	—	Ed
3788.474	Rh	50	25	—	—	3786.176	Fe I	100	60	—	—	3783.532	Mo	8	1	—	—
3788.47	Tb	3	—	—	Ed	3786.15	Ho	6	4	—	Ex	3783.530	Ni I	500	40 h	—	—
3788.45	Ho	—	4 h	—	—	3786.142	U	3 h	1 h	—	—	3783.52	Eu	10 d	5	—	—
3788.449	Dy	100	40	—	—	3786.100	Cb	3 h	3 wh	—	—	3783.509	Pr	30 d	20 d	—	—
3788.430	Ce	3	3	—	—	3786.058	Ir	30	—	—	Ab	3783.49	S	—	[15]	—	Bl
3788.359	Th	10	8	—	—	3786.055	Ru I	70	100	—	—	3783.46	Sm	8 d	5 d	—	—
3788.256	Mo	15	15	—	—	3786.045	Ti I	40	40	—	—	3783.429	Ce	3	4	—	—
3788.236	U	—	6	—	—	3786.00	Pb II	—	40	—	Sx	3783.42	Br	—	[3]	—	Bl
3788.208	Hf	3	1	—	—	3785.992	Nd	20	4	—	Kn	3783.354	Sm II	10	15	—	—
3788.206	Ce	5	2	—	—	3785.97	F II	—	[3]	—	Di	3783.347	Fe II	1 h	1 h	—	—
3788.18	Ba I	3	—	—	Sd	3785.969	Pr	4	2	—	—	3783.296	Th	20	15	—	—
3788.159	Ir	2 h	—	—	—	3785.951	Fe	125	80	—	—	3783.24	Ca	3	3	—	Ad

3783.2—3776.1 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3783.23	Xe II	-	[5 h]	Hu	3780.975	Th	15	3	-	3778.684	W	8	12 l	-
3783.192	K II	25	[30]	Dm	3780.97	Ho	-	4	Ex	3778.684	V I	60	4	-
3783.181	Mo	-	40	-	3780.93	Dy	3	-	m	3778.676	Cb	3	5 h	-
3783.16	S II	-	[8]	Hn	3780.927	W	-	8	-	3778.62	Er	10	8	-
3783.13	Kr II	-	[500 hl]	Me	3780.922	Sm II	15	15	-	3778.586	W	7	8	-
3783.082	Th	8	1	-	3780.922	Nd	-	20	-	3778.513	Fe	60	25	-
3783.070	Nd	25 d	10	-	3780.862	Ca	2	3	-	3778.512	Cb	-	5 wh	-
3783.062	Gd	25	20	-	3780.855	Th	20	5	-	3778.40	Eu	5 Wl	5 Wh	-
3783.062	Sm II	25	8	-	3780.84	A	-	[50]	Rt	3778.360	U	12	3	-
3783.035	Ce	12	3	-	3780.770	W	20	18	-	3778.358	V II	3	35	-
3783.016	Th	20	20	-	3780.762	Sm	20	20	-	3778.320	Fe I	8	4	-
3782.888	Dy	8	2	-	3780.729	Cr	3	-	-	3778.313	Pd I	2	-	-
3782.841	U	25	30	-	3780.716	U	15	20	-	3778.23	Er	8	2	-
3782.78	Hf II	4	5	Me	3780.674	La II	50	50	-	3778.148	W	6	9	-
3782.740	Ru I	8	6	-	3780.664	Pr	20	5	-	3778.140	Nd	40	40	-
3782.724	Zr II	3	5	-	3780.64	S	-	[3]	Hn	3778.135	Sm	40	100	-
3782.679	Sm	15	-	-	3780.617	Mo	3	4	-	3778.126	Rh I	25	10	-
3782.673	Mo	3	1	-	3780.561	Ce	2	-	-	3778.09	Kr II	-	[500 hl]	Me
3782.66	Rn I	-	[12]	Rs	3780.538	Zr I	40	15	-	3778.063	Ni I	25	5	-
3782.65	Ho	-	4	Ex	3780.515	La II	-	20	-	3778.006	U	4	2	-
3782.62	Tb	8	-	Ed	3780.51	Eu	9 W	10 W	-	3777.964	Mo	5	4 h	-
3782.612	Fe	7	2	-	3780.507	Th	20	10	-	3777.919	Cr	3	-	-
3782.6	S II	-	[8]	Hn	3780.504	Sm	10	3	-	3777.914	Th	15	10	-
3782.56	Yb	5	25	-	3780.492	Gd	5	-	-	3777.842	Pr	10	8	-
3782.550	V I	20	7	-	3780.46	Sr I	30	-	Fl	3777.840	Sm	10	4	-
3782.525	Ce I, II	18	2	-	3780.430	Er	10 d	1	-	3777.82	Hg II	-	[10]	Ps
3782.456	Fe I	10	2	-	3780.403	Ti	10	-	-	3777.759	Ru	3	4	-
3782.43	Hf	5	3	m	3780.391	Nd	20 d	15	-	3777.728	U	8	3	-
3782.425	Zr	7	3	-	3780.37	Ho	-	6	Ex	3777.724	Mo	5	8	-
3782.423	Sm II	15	-	-	3780.361	Re	20	-	-	3777.673	Cb	20	30	-
3782.346	Pr	25	9	-	3780.33	Dy	4	1	-	3777.672	Ce II	12	3	-
3782.310	Nd	8 d	4 d	-	3780.268	Pr	12	5	-	3777.663	Re I	40	-	-
3782.302	U	4	1	-	3780.262	U	1	8	-	3777.65	Ho	-	4 h	Ex
3782.302	Yt II	8	5	-	3780.234	W	-	8	-	3777.644	Hf	20	12	-
3782.302	Ta	1	3 h	-	3780.214	Os	20	10	-	3777.633	Pr	15	6	-
3782.284	Gd	25	50	-	3780.173	Ta	30	2	-	3777.63	Er	7	2	-
3782.26	Er	3	1	-	3780.145	Sm II	15	-	-	3777.60	O II	-	[18 l]	Fl
3782.26	S	-	[35]	Bl	3780.09	Hf II	4	10	Me	3777.60	Eu	15 W	5 W	-
3782.225	Zr II	2	2	-	3780.079	Cr	2	-	-	3777.586	Ru I	60	50	-
3782.206	Th	10	5	-	3779.968	W	8	7	-	3777.55	A II	-	[3]	Rt
3782.195	Os I	400 R	200	-	3779.964	Ru I	10	4	-	3777.542	Co I	200	-	-
3782.189	Mo	5	-	-	3779.869	Ce	3	-	-	3777.496	V I	8	2	-
3782.18	Tb	8	-	Ed	3779.86	Eu	20	10	Kn	3777.48	Tb	8	-	Ed
3782.152	V	15	3	-	3779.806	Th	20	10	-	3777.46	W	-	10	-
3782.149	Sm	10	3	Kn	3779.803	Er	10	-	-	3777.45	Dy	6	2	Ed
3782.130	Fe	8	2	-	3779.769	Mo	25	30	-	3777.447	Fe I	20	10	-
3782.109	Ti I	10	3	-	3779.768	V I	2	1	-	3777.41	Nd	10	2	-
3782.075	Mo	-	100	-	3779.767	Nd	20 d	10 d	-	3777.392	U	2	-	-
3782.034	Ce	2	-	-	3779.735	Pr	15	8	-	3777.351	Th	10	5	-
3781.981	Ce	2	-	-	3779.648	V I	30	10	-	3777.27	Yt	6	2	-
3781.935	Fe	12	5	-	3779.644	Ir	15	-	-	3777.16	Ne II	-	[75]	Bn
3781.926	Pr	20	8	-	3779.63	Dy	3	1	-	3777.16	Eu	10	5	Kn
3781.837	W	9	8	-	3779.611	Ce	6	-	-	3777.15	Lu	-	2 h	Me
3781.771	Nd	2	-	-	3779.580	Cb	2	20	-	3777.120	Th	40	20	-
3781.746	U	10	-	-	3779.563	Sm II	15	4	-	3777.102	Ta	25	10	-
3781.686	Th	20	10	-	3779.52	Sn	-	2	Ar	3777.102	Pr	20	10	-
3781.683	Ru	5	3	-	3779.483	Fe	2	-	-	3777.091	Ce	6	15	-
3781.656	I I	-	[2]	Ke	3779.47	Si	-	3	Sy	3777.089	Er	25	10 h	-
3781.645	Pr	100 d	50 d	-	3779.468	Pr	10	2	-	3777.088	Sm	30	10	-
3781.64	Sm	5 d	3 d	-	3779.466	Nd	15	15	-	3777.080	Zr	15	10	-
3781.63	Tb	8	-	Ed	3779.446	Fe I	100	70	-	3777.078	Co I	2	2	-
3781.620	Ce	25	4	-	3779.431	Ru	4	-	-	3777.062	Fe	12	7	-
3781.593	Mo	25	20	-	3779.373	I II	-	[3]	Ke	3776.992	Os	150	20	-
3781.48	Dy	8	3	m	3779.34	Ba	-	2	Py	3776.934	Ir I	10	2	-
3781.464	U	3	3 h	-	3779.32	Eu	3 w	5 w	-	3776.879	V I	10	2	-
3781.421	Pr	10	4	-	3779.315	Pr	3	2	-	3776.80	S II	-	[3]	Hn
3781.412	I	-	[7]	Ke	3779.31	Yb	2	4	-	3776.738	U	3	5 h	-
3781.393	V I	40	6	-	3779.247	Dy	6	3	-	3776.711	Ce II	2	-	-
3781.39	Eu	25 W	30 W	-	3779.227	Cb	2	2 h	-	3776.69	W	-	2 h	-
3781.379	Cb	5	200	-	3779.22	Tb	15	8	Ed	3776.608	Ce II	6	3	-
3781.361	A I	-	[300]	IHu	3779.208	W	-	7	-	3776.601	Cb	3	3	-
3781.330	Sm	2	2	Kn	3779.163	Ir	2 h	-	Ab	3776.561	Yt II	12	12	-
3781.315	Nd	20	20	-	3779.15	Se	-	[5]	Bt	3776.550	Mo	5	8	-
3781.23	Cl II	-	[30]	Ks	3779.146	Ta	2 h	3 s	-	3776.527	Mn	25	25	-
3781.211	Mo	4	4 h	-	3779.048	U	8	15	-	3776.52	Eu	4 W	4 W	-
3781.190	Fe I	40	12	-	3779.040	Ti I	8	-	-	3776.49	Tb	100	100	Ed
3781.182	U	4	6	-	3778.977	Ce	2	2	-	3776.459	Fe	125	70	-
3781.181	Ru	50	40	-	3778.915	Er	3	-	-	3776.338	Nd	15	12	-
3781.133	Ir	5	-	Ab	3778.897	I II	-	[2]	Mu	3776.32	Cd	-	3	Tk
3781.102	Ce II	5	-	-	3778.826	Nd	10 d	8 d	Kn	3776.276	Th	8	1	-
3781.1	Rb	-	[3]	Dr	3778.814	Eu	20 w	5 w	-	3776.26	Hg II	-	[30]	Ps
3781.09	Eu	4 W	-	-	3778.782	Th	15	10	-	3776.254	Os	50	15	-
3781.051	U	3	6	-	3778.747	Pr	40	20	-	3776.20	Eu	10 W	-	-
3781.018	Er	10	3	-	3778.701	Ru	12	10	-	3776.161	Cb	2	5	-
3781.014	Cb	20	20	-	3778.701	Fe I	10	4	-	3776.157	V I	50	2	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3776.146	Ce	5	5	-	3773.699	Fe I	40	10	-	3771.350	Sm	50 d	2	-
3776.104	Mo	5	5	-	3773.68	Cl II	-	[20]	-	3771.34	Kr II	-	[30 h]	Me
3776.089	Pr	8	3	-	3773.625	Cb	3	3	-	3771.325	Nd	10 d	6 d	-
3776.059	Sm	15	-	-	3773.547	U	2	5	-	3771.18	Dy	3	-	Ed
	Ti II	8	60	-	3773.540	Hg	-	[2]	St	3771.16	Eu	10 W	20 W	-
3776.02	Tb	8	-	Ed	3773.476	Pr	8	3	-	3771.110	Er	12	2	-
3776.01	Dy	2	7	Ed	3773.46	Yb	2	6	-	3771.103	Nd	10	8	-
3776.0	Ba	3	-	Py	3773.437	Ce	5	3	-	3771.10	As II	-	10	Ro
3775.991	U	10	12	-	3773.425	U	20	10	-	3771.08	Dy	10	5	Ed
3775.986	Ce	12	15	-	3773.424	Kr I	-	[50]	I	3771.075	Ru	3	-	-
3775.942	Th	20	10	-	3773.420	Sm II	15	4	-	3771.010	Hg	-	[10]	St
3775.868	Fe I	2	-	-	3773.366	Fe	2	-	-	3770.973	V II	30	60	-
3775.86	Ca	2	2	-	3773.342	Sm	15	1	-	3770.936	Sm	3	-	Kn
3775.849	Sm	2	-	-	3773.335	Nd	4	-	-	3770.927	Ta	15	1	-
3775.745	Bi	2	-	Om	3773.325	Mo	2	3	-	3770.867	Cb	10	10 h	-
3775.72	Ti I	3000	1000 R	Fl	3773.319	Dy	8	3	-	3770.766	Ce	18	3	-
3775.719	V I	30	2	-	3773.214	Ce	8	2	-	3770.736	Re I	8	-	-
3775.716	Rh I	8	3	-	3773.2	bh Ca	4	-	L	3770.730	Ir	40	5	-
3775.697	Hg	-	[2]	St	3773.198	Pr	9	5	-	3770.729	Sm II	25	50	-
3775.69	Eu	4 W	4 W	-	3773.175	Nd	10 d	10	-	3770.71	Cb	5 w	-	-
3775.665	Er	8	2	-	3773.170	Ru I	12	4	-	3770.699	Gd	50	60	-
3775.647	Mo	15	20	-	3773.157	Au II	-	10	-	3770.653	Cb	-	20 h	-
3775.608	U	12	5	-	3773.152	Cb	5	8	-	3770.64	Hf II	-	2	Me
3775.572	Ni I	500 h	40 h	-	3773.12	Hf	2	-	Me	3770.634	H I	-	[15]	Rk
3775.564	Ce	4	-	-	3773.117	La II	2	20 l	-	3770.606	W	7	6	-
3775.501	Nd	10	20	-	3773.072	Th	5	2	-	3770.54	Se II	-	[8]	Bt
3775.464	Re	10	-	-	3773.062	Dy	8	3	-	3770.54	A	-	[15]	Rt
3775.461	Zr I	7	1 h	-	3772.972	V	2	40	-	3770.530	V I	10	1	-
3775.459	Sm	10	3	Kn	3772.932	Nd	20 d	10	-	3770.523	Mo	5	5	-
3775.45	A I	-	[10]	Ms	3772.863	Ce	5	3	-	3770.484	Pr	30	9	-
3775.448	Cb	5	10	-	3772.854	Pr	80 d	20	-	3770.458	U	2	8	-
3775.446	W	8	7 s	-	3772.852	Hf II	1	2	-	3770.447	Mo	5	5	-
3775.442	U	4	4	-	3772.822	Mo	20	20	-	3770.412	Ti II	2	5	-
3775.41	Eu	4 W	-	-	3772.813	U	6	20	-	3770.412	Fe	4	1	-
3775.363	Ce	2	4	-	3772.775	Sb II	-	3 h	-	3770.388	Ce	3	-	-
3775.319	Th	20	5	-	3772.748	V I	10	-	-	3770.369	A I	-	[400]	IHu
3775.262	U	6	3	-	3772.72	Eu	2 W	-	-	3770.353	Mo	3	3	-
3775.26	Tb	15	8	Ed	3772.660	Th	8	1	-	3770.332	Cb	3	1 h	Me
3775.24	Nd	15 d	8 d	-	3772.650	Ce II	8	1	-	3770.303	Fe I	35	12	-
3775.211	Pr	10	4	-	3772.645	Sm	20	10	-	3770.244	Er	10 d	1 d	-
3775.206	Ir	8	-	-	3772.552	Pr	10	2	-	3770.240	Rh	3	2	-
3775.187	V I	25	5	-	3772.530	Ni I	15	5	-	3770.239	Sm	8	1	-
3775.02	P II	-	[30]	Gu	3772.469	Er	2	-	-	3770.23	Eu	15 W	25 W	-
3774.96	Tb	8	-	Ed	3772.450	Ce	4	1	-	3770.211	Pr	25 d	15 d	-
3774.928	Nd	10	6	-	3772.423	W	7	7	-	3770.20	Th	10 d	5 d	-
3774.907	U	10	1	-	3772.402	Nd	10	6	Kn	3770.19	Tb	8	-	Ed
3774.836	Dy	4	1 h	Ed	3772.357	U	2	4	-	3770.170	U	-	4	-
3774.827	Fe I	100	40	-	3772.252	Th	10	8	-	3770.12	Xe	-	[2 wh]	Hu
3774.74	Si	-	4	Sy	3772.18	Tb	8	-	Ed	3770.107	Yb	12	15	-
3774.678	Sm II	15 W	-	-	3772.16	Eu	18 d	-	-	3770.062	Th	10	5	-
3774.675	V	1	12	-	3772.148	V I	20	1	-	3770.003	V I	20	2	-
3774.650	Ti	2	1	-	3772.138	Nd	20 d	10 d	Kn	3769.996	Mo	5	10	-
3774.645	Mn	20	-	-	3772.138	Sm	25 d	5 d	-	3769.99	Sr II	3	3	Sd
3774.619	Os	60	12	-	3772.077	Pr	1	3	-	3769.99	Au	-	5 h	-
3774.605	Co I	200 W	-	-	3772.06	Ca	2	3	Ad	3769.990	Fe I	80	30	-
3774.588	Pr	10	2	-	3772.059	Zr II	1	2	-	3769.984	Cb	5	5	-
3774.54	A	-	[3]	Rt	3772.056	Nd	5	1	-	3769.974	Rh I	25	30	-
3774.52	Hg	-	[30]	Ps	3772.052	W	9	10	-	3769.948	Er	8	2	-
3774.440	Cb	3	5	-	3772.029	Ce	3	-	-	3769.939	Ce	8	3	-
3774.400	Os	60	15	-	3771.952	Mo	30	30	-	3769.867	W	10	10	-
3774.399	Ce	2	-	-	3771.944	Os	40 s	12	-	3769.816	Nd	20	4	-
3774.382	Cb	2	5	-	3771.93	Ba I	3	-	Sd	3769.736	Ti	10	-	-
3774.332	Yt II	12	100	-	3771.904	Cu I	30	5	-	3769.695	Pr	20	6	-
3774.331	Ti I	8	-	-	3771.852	Cb	20	20	-	3769.644	Nd	100	20	-
3774.322	Nd	20	30	-	3771.803	Th	10	5	-	3769.600	Th	5	1	-
3774.32	Yb	8	-	-	3771.799	Nd	15 d	6 d	-	3769.535	U	4	18	-
3774.305	Sm II	10	-	-	3771.766	Pr	40 d	20 d	-	3769.48	Ba I	4	-	Sd
3774.25	Cl II	-	[25]	Ks	3771.76	Eu	10 d	-	-	3769.455	Ni II	2	50 h	-
3774.22	Sr II	1	2 h	Sd	3771.74	Tb	8	-	Ed	3769.453	Gd	50	40	-
3774.212	Th	8	8	-	3771.725	Gd	10	-	-	3769.449	Ne I	-	[7]	Ps
3774.138	W	-	18	-	3771.655	Ti I	70	30	-	3769.408	Ce	3	-	-
3774.127	Sm	20	5 h	Kn	3771.640	Os	20	10	-	3769.356	Ce	2	-	-
3774.109	V I	20	3	-	3771.632	Rh I	5	2	-	3769.343	Nd	12	6	-
3774.08	Nd	20 d	10 d	-	3771.606	Ce II	15	2	-	3769.32	Eu	12 wh	5 wh	-
3774.08	Eu	50 W	10 W	-	3771.604	Ir I	40	4	-	3769.307	Re	6	-	-
3774.064	Pr	100	50	-	3771.57	Ra	-	[10]	Rs	3769.250	Ce	3	-	-
3774.06	U	-	12 w	-	3771.493	Fe I	2	-	-	3769.210	W	12	10	-
3773.895	Ce	2	-	-	3771.436	I II	-	[2]	Mu	3769.146	Cb	10	15	-
3773.83	Br	-	2	Bl	3771.424	Mo	3	3	-	3769.133	Cl II	-	[20]	Ks
3773.806	V	-	[3]	-	3771.42	Eu	4 d	-	-	3769.073	V I	30	10	-
3773.793	Ru	3	-	-	3771.412	U	1	8	-	3769.041	Ce II	6	1	-
3773.780	Os	12	5	-	3771.381	Ce	3	2	-	3769.0	Eu	10 d	-	Kn
3773.760	Th	20	20	-	3771.377	Th	30 w	20 w	-	3768.997	Ir	4	-	-
3773.758	I	-	[10]	Ke	3771.373	Pr	25 d	10 d	-	3768.994	Cr	2	2	-
3773.705	W	20	18	-	3771.365	Hf II	2	6	-	3768.98	La II	-	2	Me

3768.9—3761.6 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3768.978	W	-	7	-	3766.446	Ti I	10	3	-	3764.032	Ru	6	5	-
3768.934	Pr	50	30	-	3766.403	V I	15	5	-	3764.02	Eu	2 W	-	-
3768.81	He I	-	[2]	Pa	3766.398	Mo	3	5	-	3764.013	Mo	3	4	-
3768.810	Sm	3	-	-	3766.385	Pt II	-	20	-	3763.800	Mn	40	25	-
3768.796	U	15	12	-	3766.375	Zr	3	3	-	3763.790	Fe I	500	400	S
3768.791	Er	5	-	-	3766.36	Tb	8	-	Ed	3763.724	Ce	3	-	-
3768.762	Ce	8	2	-	3766.347	Th	5	2	-	3763.72	Cb	5	1	-
3768.742	Mo	4	5	-	3766.301	Os	100	20	-	3763.638	W	-	5	-
3768.734	Cr I	35	25	-	3766.30	Eu	6 d	-	-	3763.612	Ru	4	-	-
3768.70	P II	-	[50]	Gu	3766.293	Ce	2	3	-	3763.605	Ce II	6	2	-
3768.676	Ir I	60	10	-	3766.29	Ne II	-	[75]	Bn	3763.601	Th	2	2	-
3768.658	Ce	2	1	-	3766.262	Zr	3	3	-	3763.573	Pr	4	2	-
3768.624	Mo	4	4	-	3766.249	Er	5	-	-	3763.52	A	-	[10]	Rt
3768.532	U	2	5	-	3766.22	Ho	4	2	Ex	3763.50	Tb	8	-	Ed
3768.51	Eu	8 wh	-	-	3766.162	Er	9	3	-	3763.495	Re I	15 wl	-	-
3768.457	Gd	10	-	-	3766.157	Ir I	4	1 h	Ab	3763.492	Cb	10	10	-
3768.447	W	20	18	-	3766.134	Cb	15	20	-	3763.475	Nd	20	20	-
3768.437	Th	8	8	-	3766.13	A II	-	[10]	Rt	3763.443	Ta	12	60	-
3768.411	U	1	2	-	3766.10	Yb	2	6	-	3763.44	U	6	-	-
3768.405	Gd	20	20	-	3766.087	Fe I	2	1	-	3763.377	Mn	20 s	20	-
3768.39	Pt II	-	10	Sh	3766.08	Eu	2 W	-	-	3763.37	Xe II	-	[8]	Hu
3768.388	Pr	2	2	Kn	3766.064	Ce	6	-	-	3763.351	Mo	10	10	-
3768.35	Tb	8	8	Ed	3765.993	Pr	8	3	-	3763.335	Th	15	8	-
3768.307	Sm	10	-	-	3765.940	Eu II	10	-	-	3763.328	Gd	8	8	-
3768.305	Ce	4	8	-	3765.924	Nd	6	4	-	3763.266	U	12	25	-
3768.254	Hf	4	1	-	3765.889	Ce	5	1	-	3763.24	Er	15 d	1	-
3768.254	Sm	10	-	-	3765.88	Kr II	-	[2 wh]	Me	3763.24	Se II	-	[20]	Bl
3768.253	Re	6	-	-	3765.870	U	1	8	-	3763.198	Ir	3	-	-
3768.240	Cr I	60	60	-	3765.85	Tm	10	10	Me	3763.161	Sm	15	-	Kn
3768.23	Eu	18 w	-	-	3765.822	Ru	5	-	-	3763.141	V I	80	6 h	-
3768.218	Er	10 d	-	-	3765.787	Cb	2	3	-	3763.121	Cb	1 h	10 h	-
3768.157	Mn	10	10	-	3765.752	Sm	5	-	Kn	3763.033	Pr	9	5	-
3768.138	Os	80	15	-	3765.737	Mo	5	10 h	-	3763.018	Eu	4	2	-
3768.13	Cl II	-	[18]	Ks	3765.727	Ce	2	-	-	3763.009	U	6	1	-
3768.10	Cd II	-	2	-	3765.706	Fe	1	1	-	3763.004	Gd	10	5	-
3768.029	Fe I	15	8	-	3765.615	Sm	5	-	Kn	3762.982	Cb	1	5 h	-
3767.996	Ce	3	-	-	3765.612	Cr II	-	15	-	3762.975	Ce	15	4	-
3767.931	Sm	3	2	-	3765.542	Fe	200	150	S	3762.973	Yt	5	3	-
3767.92	S	-	[4]	Bl	3765.527	Ce	2	-	-	3762.913	Fe II	2	4	-
3767.905	Th	20	15	-	3765.427	Sm	8	8	-	3762.885	W	-	5	-
3767.903	Ce	3	-	-	3765.412	Ir	3	-	-	3762.885	Th	20	20	-
3767.883	Zr II	3	4	-	3765.345	U	18	1	-	3762.85	Ho	-	4 h	Ex
3767.846	W	10	8	-	3765.344	Nd	10	4	Kn	3762.74	Tb	8	-	Ed
3767.835	U	-	2 h	-	3765.310	W	7	7	-	3762.74	Dy	6	2	m
3767.761	Er	2	-	-	3765.27	A	-	[15]	Rt	3762.668	Ce	2	3	-
3767.759	Nd	15	20	-	3765.256	Th	20	10	-	3762.663	U	2	2	-
3767.758	Sm	15	10	-	3765.225	Mo	6	6	-	3762.64	Ca	2	3	-
3767.732	Mo	4	25	-	3765.181	Zr I	3	-	-	3762.618	Ni	2	-	-
3767.73	S	-	[8]	Bl	3765.14	Tb	70	100	Ed	3762.594	Nd	15	20	-
3767.721	V	2	10	-	3765.078	Rh I	100	70	-	3762.563	Pr	8	2	-
3767.696	Mn	12	12	-	3765.076	Cb	25 w	10 w	-	3762.55	Yb	4	10	-
3767.642	Dy	15	5	-	3765.044	Ce II	12	3	-	3762.513	Zr	2 h	-	-
3767.60	Eu	15 wh	5 wh	-	3765.035	Mo	5	4	-	3762.51	O II	-	[12 I]	Mh
3767.57	Cl II	-	[30]	Ks	3765.033	Fe	3	-	-	3762.51	Hf II	2	25	Me
3767.566	Ce	2	4	-	3764.987	Pr	10	4	-	3762.452	Cb	5	20 h	-
3767.550	Tb	75	8	Ed	3764.939	Ir	10	2	-	3762.42	Si	-	3	Sy
3767.431	Cr	20	10	-	3764.86	Dy	6	4 h	m	3762.366	Pr	5	3	-
3767.43	Ca I	2	-	-	3764.841	Zr	3	3	-	3762.363	Th	10	3	-
3767.427	Cb	3	4	-	3764.837	Cu I	9	-	-	3762.361	Nd	10	4	-
3767.423	W	7	10	-	3764.83	Au	5	3	-	3762.34	Tb	3	-	Ed
3767.372	K II	-	[30]	Dm	3764.811	Pr	100	50	-	3762.33	Eu	9 w	-	-
3767.362	Sm II	20	10	-	3764.799	V I	10	6	-	3762.305	Ti	10	1	-
3767.350	Ru	50	50	-	3764.785	U	6	12	-	3762.28	Dy	3	1 h	Ed
3767.257	V I	20 w	10	-	3764.76	Eu	5 W	1 Wh	-	3762.280	Ce	4	5	-
3767.194	Fe I	500	400	S	3764.75	Tb	8	-	Ed	3762.26	Xe	-	[5]	Hu
3767.193	Ce	2	-	-	3764.663	Th	2	3	-	3762.220	Ce	3	-	-
3767.05	La II	2 h	10 h	Me	3764.641	Cb	-	3	-	3762.212	Gd	10	3	-
3767.036	Gd	15	10	-	3764.634	Gd	10	10	-	3762.209	Fe I	7	3	-
3766.952	Zr I	2	-	-	3764.608	Ce	4	3	-	3762.208	Ir	2	-	Ab
3766.924	Hf II	5	25	-	3764.603	Cr	2	-	-	3762.114	U	10	6	-
3766.923	Sm	5	-	Kn	3764.570	U	8	10	-	3762.086	Mo	10	30	-
3766.889	U	10	-	-	3764.47	Sn	-	5	Ar	3762.05	Xe	-	[3 h]	Hu
3766.846	Ce	3	1	-	3764.435	Mo	5	10	-	3762.0	Sr	1	3	Sd
3766.820	Zr II	15	20	-	3764.393	Zr I	20	10	-	3761.961	U	2	8	-
3766.715	Zr I	15	-	-	3764.382	Nd	10 d	4	-	3761.953	Ce	2	-	-
3766.696	Ce	4	-	-	3764.377	Sm II	40	25	-	3761.941	Ir	2	4	-
3766.666	Fe I	3	2	-	3764.33	Eu	8	-	-	3761.917	Tm	200	120	Me
3766.590	Nd	10	2	-	3764.312	W	8	9	-	3761.888	Ti II	12	15	-
3766.56	La II	-	3 h	-	3764.31	Er	20 d	-	-	3761.868	Cr	5 h	10 h	-
3766.553	Ir	3	-	-	3764.277	Th	10	5	-	3761.867	Pr	150	100	-
3766.509	Ce II	12	3	-	3764.202	Gd	5	8	-	3761.81	P II	-	[30]	Gu
3766.480	Ru	3	2	-	3764.169	U	1	5 h	-	3761.755	Mo	6	6	-
3766.478	Pr	8	4	-	3764.118	Cb	10	10	-	3761.72	Ca I	2	4	Cw
3766.476	Re I	20	-	-	3764.117	Ce II	18	5	-	3761.701	Cr	4	8	-
3766.46	U	-	6 w	-	3764.086	Pr	12 d	5 d	-	3761.621	W	7	8	-

Wave-length	Element	Intensities Aro Spk., [Dis.]	R	Wave-length	Element	Intensities Aro Spk., [Dis.]	R	Wave-length	Element	Intensities Aro Spk., [Dis.]	R
3761.606	Pr	10	6	—	3759.093	Er	5	—	3756.580	Nd	15
3761.601	U	2	6	—	3759.080	La II	400	150	3756.539	Sm	35
3761.575	Nd	20	10	—	3759.078	Ce	4	—	3756.499	V	—
3761.555	Ir I	5	—	—	3759.011	Gd	20	15	3756.48	Tb	2
3761.508	Ru	12	45	—	3758.974	Sm	25	30	3756.409	Sm II	25
3761.475	Th	10	1	—	3758.944	Nd	20	30	3756.375	Bi	—
3761.460	Ce	2	—	—	3758.942	W	—	15	3756.370	W	7
3761.442	V I	40	7	—	3758.93	Kr II	—	[6 whl]	3756.340	Er	20 wd
3761.408	Fe I	20	8	—	3758.801	V I	4	1	3756.320	Th	50 r
3761.40	Dy	2 h	—	Ed	3758.743	U	1	3	3756.255	Ce	6
3761.381	Pr	8	2	—	3758.718	Ca	3	3	3756.252	Cb	5
3761.349	Ta	8	—	—	3758.699	Ce	3	—	3756.143	Pr	2
3761.333	Tm	250	150	Me	3758.56	Eu	5 W	1 Wh	3756.114	Ce	2
3761.323	Ti II	100	300 r	—	3758.549	V I	25	3	3756.10	Dy	4
3761.185	Ce	3	—	—	3758.523	Mo	25	25	3756.094	Nd	4 h
3761.144	Sm	6	2 h	Kn	3758.517	Ce	8	4	3756.071	Fe	15
3761.134	Eu II	10	10	—	3758.468	Th	5	3	3756.068	Sm	8
3761.126	Cb	15	20	—	3758.454	Sm II	10	8	3756.053	Er	12
3761.12	Tb	15	—	Ed	3758.32	Tb	3	—	3756.035	V I	35
3761.104	Th	15	8	—	3758.297	V I	4 h	20	3756.00	Eu	3 W
3761.044	U	4	8	—	3758.237	Gd	10 h	8	3755.948	Cb	2 W
3761.025	Re	2 h	—	—	3758.235	Fe I	700	700	3755.931	Ru I	30
3761.00	Yb	3	6	—	3758.221	Ce	5	—	3755.842	Mo	5
3760.956	Pr	5	3	—	3758.05	Hf II	5	—	3755.828	Cr	2
3760.942	Nd	10 d	4 d	—	3758.049	Ce	3	—	3755.786	Ce	3
3760.931	Gd	10	10	—	3758.044	Cr I	50	35	3755.768	Cb	10
3760.885	Mo	6	10	—	3757.969	U	2	—	3755.727	Ru	6
3760.884	U	10	15	—	3757.947	Gd	15	5	3755.722	Ce	8
3760.839	Ir	2 h	—	Ab	3757.944	Nd	6	2	3755.701	V I	70
3760.824	Ce	2	—	—	3757.923	W	15	20	3755.639	Cb	5 w
3760.8	Rn	—	[10]	Wo	3757.90	Tb	30	15	3755.625	Re	15
3760.794	V I	30	5	—	3757.862	Ce II	15	2	3755.602	Nd	15
3760.76	Eu	10 W	—	—	3757.850	Mo	2	3	3755.584	Rh I	4
3760.760	Cb	2	8 h	—	3757.820	Nd	15	12	3755.54	Mo	1
3760.715	Gd	25	25	—	3757.794	Zr II	3	6	3755.5	Ho	—
3760.697	Sm II	25	40	—	3757.746	Ta	20	1 h	3755.50	W	8 d
3760.694	Ce	6	4	—	3757.74	Sm	3	3	3755.486	Pr	3
3760.644	Cb	5	4	—	3757.73	Gd	15	20	3755.482	U	1
3760.639	W	7	6	—	3757.700	Th	10	5	3755.476	Sm	10
3760.534	Fe	100	70	—	3757.689	Ti II	30	100	3755.45	Eu	6 d
3760.405	Rh I	6	2	—	3757.662	Cr I	50	50	3755.449	Co I	100
3760.399	Ce II	5	3	—	3757.648	Eu	7	2	3755.425	Ce II	20
3760.393	Co I	30	—	—	3757.628	Re I	25 w	—	3755.407	Th	10
3760.380	W	—	9	—	3757.530	Sm	15	15	3755.37	Dy	6
3760.36	Er	15 d	1 d	—	3757.501	Ce	3	2	3755.285	Cb	5
3760.360	Nd	10 d	6 d	—	3757.455	Fe	15	10	3755.278	Sm II	20
3760.345	U	1	2	—	3757.44	Tb	30	15	3755.256	Gd	1
3760.34	Eu	10 W	10 W	—	3757.42	Eu	3 W	2 W	3755.25	Hg	—
3760.297	Pr	2	1	—	3757.372	Dy	200	50	3755.24	Tb	50
3760.277	Th	20	5	—	3757.369	Er	20	7	3755.217	Th	8
3760.274	Os	20	10	—	3757.349	W	8	7	3755.107	Ta	25
3760.231	V II	6	40	—	3757.335	Th	5	2	3755.102	Mo	30 d
3760.209	Ta	8	2 d	—	3757.26	Ca	3	3	3755.090	Ru I	20
3760.177	Ce	2	—	—	3757.26	Ho	40	30	3755.012	Ti	12
3760.175	Sm	5	—	—	3757.256	Th	5	2	3754.976	Pr	20
3760.13	Tb	15	3	Ed	3757.24	Zr	5	5	3754.974	U	1
3760.126	W	15	10	—	3757.222	Ce	18	3	3754.90	Eu	4
3760.080	Pr	20	8	—	3757.209	Hf	6	2	3754.883	W	6
3760.052	Fe I	150	100	S	3757.185	Ir	10	1 h	3754.863	Sm II	15
3760.049	Sm II	25	10	—	3757.174	Cr I	50	30	3754.830	Nd	20
3759.031	Ru I	20	50	—	3757.116	Os	40	15	3754.824	Ce	4
3759.94	Er	4 d	—	—	3757.1	Rn	—	[5]	3754.794	Zr I	5
3759.880	U	1	10	—	3757.1	C	—	[12]	3754.77	Dy	7
3759.836	Ru	12	25	—	3757.088	W	10	9	3754.770	Ce	2
3759.8	air	—	9	m	3757.063	Dy	10	5	3754.682	Mo	—
3759.795	Nd	10	12	—	3757.056	Er	5	—	3754.675	Sm II	10
3759.754	Ce	10	2	—	3756.946	Zr II	—	2	3754.6	air	—
3759.753	Ta	35	2	—	3756.941	Fe	80	60	3754.596	Th	20
3759.690	Co I	30	—	—	3756.925	U	2	8	3754.575	Cr II	8
3759.609	Pr	30	10	—	3756.892	Ta	—	8	3754.517	Ta	20
3759.603	Mo	10	10	—	3756.87	Xe II	—	[5]	3754.510	Ir I	25
3759.553	Cb	40	50	—	3756.867	W	6	15	3754.504	Fe I	2 h
3759.54	Er	2	—	—	3756.861	Tm	40	20	3754.479	Ce	8
3759.492	Cu I	20	2 h	—	3756.811	Pr	5	3	3754.411	Fr	5
3759.460	Fe II	—	2	—	3756.81	Eu	3 W	1 Wh	3754.353	Nd	8 d
3759.445	Th	8	1	—	3756.79	Lu	6	—	3754.348	Co I	30
3759.43	Eu	2 W	—	—	3756.78	S	—	[8]	3754.31	Se II	—
3759.35	Tb	15	8	Ed	3756.70	Lu	8	—	3754.308	U	6
3759.319	V I	50	2	—	3756.68	A	—	[3]	3754.294	Sm	10
3759.314	Th	20	10	—	3756.662	Th	5	3	3754.273	Rh I	10
3759.295	Ti II	100	400 R	—	3756.659	U	6	—	3754.266	Er	2
3759.26	Ho	—	4	Ex	3756.657	Pr	12 d	7 d	3754.24	Kr II	—
3759.231	U	15 h	15	—	3756.639	Mn	20	20	3754.22	Sm	10
3759.158	Fe	3	2	—	3756.635	Ce II	—	[10]	3754.216	Ne I	—
3759.132	Ce	4	4	—	3756.58	Ca	3	4	3754.154	W	5

3754.1—3745.9 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
3754.123	Rh I	8	8	3751.782	V I	50	2	3748.998	Cr I	125 R	125 R
3754.075	Zr I	2	1	3751.757	Co	6	4	3748.970	Th	8	5
3754.06	A II	—	[3]	3751.744	Sm	25	2	3748.969	Fe I	35	20
3754.042	Ir	3	—	3751.737	Th	10	3	3748.822	Pr	9	3
3754.037	Th	20 w	5 w	3751.737	Hg	—	[5]	3748.678	U	15	25
3754.0	Bi II	—	3	3751.72	Eu	7 W	—	3748.629	Sm II	10	5
3753.958	Ce	2	2	3751.717	U	10	12	3748.614	Cr I	40	30
3753.916	Nd	4	8	3751.629	Co I	100	60	3748.564	Ir I	3	—
3753.83	Ne II	—	[18]	3751.62	Nd	10 w	8 w	3748.554	Cb	10	10
3753.767	Ce	6	1	3751.62	Tb	8	3	3748.527	Ce	2	—
3753.763	Eu	5	1	3751.601	Pr	2	1	3748.515	Sm	5	—
3753.762	Dy	80	10	3751.595	Zr II	25	40	3748.504	Pr	5	3
3753.75	Ho	20	10 h	3751.562	Sm II	25	6	3748.490	Fe II	2 h	—
3753.703	U	—	4	3751.53	Eu	5 w	1 wh	3748.490	Mo	15	10
3753.65	Rn I	—	[50]	3751.449	Ce	15 s	6	3748.46	Cl II	—	[15]
3753.635	Ti I	80	35	3751.428	W	7 l	8 l	3748.374	Ca I	12	—
3753.614	Fe I	150	100	3751.402	Os	—	[4]	3748.304	Th	10	8
3753.614	Sm	15	—	3751.315	Sm II	20	10	3748.264	Fe I	500	200
3753.545	Ru	30	60	3751.289	Cb	1	15	3748.217	Rh I	200	100
3753.53	A II	—	[5]	3751.26	Ne II	—	[18]	3748.207	Cu II	—	10
3753.53	Mo	—	25	3751.236	U	—	8	3748.17	Ho	60	40
3753.52	Tb	30	3	3751.228	V	4	100	3748.153	Sm	5	4
3753.514	Dy	50	20	3751.203	Mo	6	40 d	3748.13	Mo	1	50
3753.481	W	5	6	3751.185	U	6	—	3748.102	Ti I	10	1
3753.375	Pr	9	2	3751.121	Sm	15	4	3748.06	I I	—	[5]
3753.367	Ca I	30	3	3751.108	Th	10	—	3748.058	Pr	9	4
3753.324	Ir	15	—	3751.060	Fe	1	—	3748.056	Ce	10	3 h
3753.274	V I	30	2	3751.05	Eu	6 w	1 wh	3748.003	Ti II	2	25
3753.241	Th	10	1	3751.002	Ce II	15	5	3747.99	La	2	4 l
3753.2	bh Ca	8	—	3751.001	Pr	40	30	3747.982	V I	50	4
3753.196	Sm	10	—	3750.873	V II	10	20	3747.827	Dy	60	20
3753.180	Cb	10	10	3750.81	Cl	—	[8]	3747.782	Ti I	7	1
3753.155	Fe	3	1	3750.804	Os	15	5	3747.753	Sm	3	—
3753.142	W	—	8	3750.78	W	—	12	3747.64	Tb	30	—
3753.10	Al II	—	[2]	3750.768	Ir	15	2	3747.623	Sm II	25	25
3753.096	Sm	15	—	3750.763	Mn	60	30	3747.554	Yt II	12	15
3753.08	U	5 h	—	3750.735	Nd	10	6	3747.554	Er	20	10
3753.061	Eu	5	—	3750.731	Ce	2	2	3747.547	Th	30	30
3753.059	Ce	6	2	3750.705	Eu	2	—	3747.546	Ce	6	—
3753.04	La II	2	1	3750.690	Th	10	5	3747.50	Kr	—	[2 wh]
3753.024	Sm	1	2	3750.680	Re	10	—	3747.49	Hf II	6	8
3752.93	Tb	3	—	3750.670	Sm	10	8	3747.473	Pr	10	3
3752.867	U	1	2	3750.645	Zr II	4	3	3747.457	W	7	5
3752.865	Ir I	3	—	3750.634	Cb	4	4	3747.437	Er	2	—
3752.860	Ti I	200	80	3750.590	Os	15	5	3747.353	Sm	8	1
3752.860	Eu	5	1	3750.562	Cr	—	12 h	3747.265	Pr	5	2
3752.787	Co	10	3	3750.544	Er	7	—	3747.264	Cr	12	6
3752.78	Re	3 d	—	3750.50	A	—	[5]	3747.246	Ta	35	—
3752.778	Ru	8	3	3750.497	Th	8	—	3747.24	Eu	5 W	1 wh
3752.775	Os	4 d	—	3750.486	Pr	20	10	3747.204	Ir I	100	60
3752.723	Cb	4	3	3750.404	Ir	30	—	3747.192	Mo	15	10
3752.714	Ce	2	—	3750.349	Ca I	20	3	3747.17	Tb	30	—
3752.692	Pr	10	2	3750.334	Dy	8	4	3747.136	V I	25	2
3752.68	Au	5	10	3750.307	Nd	8	10	3747.115	U	6	10
3752.679	Nd	10	12	3750.223	Cb	3	5	3747.087	Ce	2	1
3752.663	U	6	15	3750.167	Er	12 d	—	3746.934	Re	10	—
3752.65	Sm	—	2 h	3750.152	H I	—	[10]	3746.929	Fe	40	25
3752.573	Th	40	50	3750.150	Th	20	5	3746.92	A	—	[5]
3752.54	Eu	7 W	—	3750.13	Eu	8 wh	2 wh	3746.907	Cb	20	80
3752.524	Os I	400 R	100	3750.125	Pr	30	15	3746.9	Pb II	—	[30]
3752.515	Ir	4	—	3750.078	Ce	12	3	3746.803	Hf	20	8
3752.496	Nd	10	15	3750.00	Cl II	—	[30]	3746.716	Eu	4	3
3752.49	Ca	2 h	2 h	3749.935	Co I	60	5	3746.677	U	1	5
3752.453	Ce	3	—	3749.892	Yt I	3	4	3746.62	Er	2	—
3752.420	Fe I	12	4	3749.859	U	—	8	3746.616	Mn	25	25
3752.378	Mo	5	1	3749.853	Nd	6	8	3746.568	Ce	2	1
3752.336	Ce	5	2	3749.796	Pr	5	2	3746.54	Tb	8	8
3752.297	Cb	2	1	3749.795	Sm	—	3 h	3746.485	Fe I	3	1
3752.295	U	6 r	5	3749.77	As II	—	100	3746.466	Os	100	20
3752.291	Pr	40 d	30 d	3749.75	Eu	3 W	—	3746.46	A	—	[5]
3752.287	Nd	10 d	4 d	3749.74	U	2 h	—	3746.423	Gd	5	10 h
3752.261	Mo	—	10	3749.70	Tb	15	—	3746.413	U	3	12
3752.256	Sm	25	1 h	3749.69	Yb	2	10	3746.41	Mo	—	40 w
3752.191	Er	20	—	3749.660	W	7	8	3746.381	Rb II	—	[10]
3752.190	Ce	3	3	3749.493	Ce	2	2 h	3746.374	Ce II	8	2
3752.07	Ho	—	4 h	3749.487	Fe I	1000 r	700	3746.365	Ta	35	5
3752.058	Fe	2 h	—	3749.48	Rn I	—	[8]	3746.246	Ce II	3	—
3752.02	Sb II	—	2 h	3749.47	O II	—	[125]	3746.218	Ru I	4	4
3751.97	Er	2	—	3749.365	Ce	5	—	3746.128	Nd	2	—
3751.943	Os	15	10	3749.159	U	2	8	3746.06	Er	12 W	1 W
3751.940	Mo	4	5	3749.15	Pb	—	2	3746.05	Sm	—	2 h
3751.853	Ru	5	3	3749.073	Os	4	2	3746.03	Eu	10	—
3751.820	Fe I	5	2	3749.045	Ni I	50	5	3745.986	Zr II	—	15
3751.816	Tm	50	5	3749.020	Re	5	—	3745.983	Th	15	20
3751.814	Dy	7	3	3749.005	Pr	2	—	3745.903	Fe I	150	100

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3745.803	V	35	600	—	—	3742.23	Eu	25 W	—	—	—	3739.764	Gd	100	50	—	—
3745.8	Sn	—	6	—	Ar	3742.223	Ce	6	3	—	—	3739.690	Ce II	6	2	—	—
3745.69	Xe I	—	[4]	—	Me	3742.208	Zr	3	3	—	—	3739.620	Re	3	—	—	—
3745.64	Dy	4	—	—	Ed	3742.156	Nd	6	4	—	—	3739.60	F II	—	[10]	—	Di
3745.616	Sm II	40	30	—	—	3742.126	I	—	[40]	—	Ke	3739.589	Pr	9	3	—	—
3745.564	Fe I	500	500	—	—	3742.093	Ta	3	—	—	—	3739.531	Fe	80	35	—	—
3745.56	W	—	25	—	—	3742.08	Lu	2	—	—	Me	3739.50	Eu	18 w	—	—	—
3745.504	Co I	300 R	—	—	—	3741.945	Hf	2	2 h	—	—	3739.484	W	10	12	—	—
3745.48	Mo	30 hd	20 d	—	—	3741.89	Tb	8	8	—	Ed	3739.465	Ru	20	18	—	—
3745.461	Sm	40	10	—	—	3741.851	Er	18 d	—	—	—	3739.360	Sm	10	2	—	—
3745.44	Re I	40 W	—	—	—	3741.823	Pr	5	2	—	—	3739.355	Dy	12	5	—	—
3745.43	Ir I	3	—	—	—	3741.81	Mo	—	20	—	—	3739.34	I	—	[18]	—	Bl
3745.38	Xe I	—	[10]	—	Me	3741.791	Fe	3 h	—	—	—	3739.312	Fe I	7	2	—	—
3745.111	Er	4	1	—	—	3741.778	Cb	20	15	—	—	3739.311	U	1	2	—	—
3745.07	Tb	15	3	—	Ed	3741.731	Ir I	25	2	—	—	3739.261	Sb	2	5	—	—
3744.987	Er	9	2	—	—	3741.727	Ce II	10	1	—	—	3739.229	Ni I	100	10	—	—
3744.98	Hf II	15	20	—	m	3741.713	W	12	20	—	—	3739.199	Sm II	10	10	—	—
3744.954	Ir I	5	—	—	Ab	3741.710	I	—	[40]	—	Ke	3739.193	Pr	80	30	—	—
3744.945	Mo	5	8	—	—	3741.69	Kr II	—	[200 hl]	—	Me	3739.16	W	—	8	—	—
3744.911	W	5	3	—	—	3741.644	Ti II	30	200	—	—	3739.129	Fe I	10	5	—	—
3744.85	La	1	2 h	—	—	3741.62	Eu	3	—	—	—	3739.125	K II	—	[20]	—	Dm
3744.817	Pr	3	—	—	—	3741.58	Tb	15	8	—	Ed	3739.120	Sm	10	10	—	—
3744.805	Gd	25	12	—	—	3741.577	U	4	3	—	—	3739.041	Hf	3	1	—	—
3744.805	U	—	2	—	—	3741.529	Os	20	5	—	—	3739.028	Ce	3	—	—	—
3744.804	Nd	8	4	—	—	3741.504	V I	80	8	—	—	3738.912	Ru	10	10	—	—
3744.80	Kr II	—	[150 hs]	—	Me	3741.484	Fe I	3	—	—	—	3738.901	Ti I	40	10	—	—
3744.739	Th	15	10	—	—	3741.427	Nd	20	15	—	—	3738.898	W	7	6	—	—
3744.723	Ce	3	2	—	—	3741.399	Ce	8	—	—	—	3738.86	Pd II	—	15	—	—
3744.66	Ne II	—	[12]	—	Bl	3741.32	Eu	10	5	—	—	3738.846	Th	20	20	—	—
3744.562	Ni I	6	—	—	—	3741.299	Cb	2	15	—	—	3738.841	Mo	1	10	—	—
3744.55	Eu	10 w	5 wh	—	—	3741.283	Sm	25	25	—	—	3738.76	Eu	4 w	—	—	—
3744.490	Cr I	30	12	—	—	3741.280	U	—	3	—	—	3738.757	V I	100	7	—	—
3744.404	K II	—	[20]	—	Dm	3741.276	Ta	7 h	1 h	—	—	3738.629	Ru	8	8	—	—
3744.395	Ru	8	35	—	—	3741.242	Cu I	50	2	—	—	3738.624	U	1	8	—	—
3744.366	Mo	20	80	—	—	3741.24	Tb	15	8	—	Ed	3738.604	Yt I	6	—	—	—
3744.24	U	6 hd	10 hd	—	—	3741.190	Th	80	80	—	—	3738.531	Ir	60	10	—	—
3744.219	Ru I	8	25	—	—	3741.18	Dy	6	2	—	Ed	3738.424	Cb	10	15	—	—
3744.21	P	—	[70]	—	Gu	3741.15	S	—	[3]	—	Hn	3738.376	Cr II	6	40	—	—
3744.20	Eu II	20 W	—	—	—	3741.14	Ti I	2	3	—	Rl	3738.346	V	—	4 h	—	Me S
3744.167	Rh I	30	15	—	—	3741.121	Mo	10 h	—	—	—	3738.308	Fe	100	100	—	—
3744.105	Fe I	40	20	—	—	3741.101	Er	15	2	—	—	3738.261	Sm	5	—	—	—
3744.075	Ce II	3	—	—	—	3741.085	Os	40	15	—	—	3738.253	Ce	5	—	—	—
3744.071	Tm	100	10	—	Me	3741.062	Ti I	150 r	40	—	—	3738.214	Ta	10	1	—	—
3744.002	Cb	30	30	—	—	3741.030	Mn	15	15	—	—	3738.168	Er	8	2	—	—
3743.99	Tb	8	3	—	Ed	3741.007	Pr	40	15	—	—	3738.115	Zr II	4	2	—	—
3743.989	Pr	7	4	—	—	3741.006	Ce	8	—	—	—	3738.111	W	6	7	—	—
3743.986	Ce	6 h	2 h	—	—	3740.964	Nd	6	8	—	—	3738.068	Eu	10	10	—	—
3743.945	Ru I	5	4	—	—	3740.849	Th	40	20	—	—	3738.057	Nd	25	—	—	—
3743.884	Cr I	40	40	—	—	3740.838	Cb	10	10	—	—	3738.048	U	8	20	—	—
3743.863	Sm II	50	25	—	—	3740.764	Mo	10	4	—	—	3738.003	Al II	—	[10]	—	Sy
3743.812	W	7	6	—	—	3740.754	Sm	4	1	—	—	3737.992	V I	50	5	—	—
3743.810	Mo	5	5	—	—	3740.73	Kr II	—	[6]	—	Me	3737.958	Ce	4	—	—	—
3743.787	Fe I	1	—	—	—	3740.725	Cb	3	50	—	—	3737.906	Mo	20	20	—	—
3743.76	A I	—	[100]	—	Ms	3740.574	Ce	2	—	—	—	3737.89	A II	—	[15]	—	Rt
3743.607	V II	10	40	—	—	3740.571	Mo	3	3	—	—	3737.876	Hf II	15	25	—	—
3743.578	Cr I	40	40	—	—	3740.537	Cb	3 h	2 h	—	Me	3737.873	Sm	2	—	—	Kn
3743.561	Eu	10	—	—	—	3740.51	Br	—	[4]	—	Bl	3737.845	W	4	5	—	—
3743.513	Th	8	8	—	—	3740.429	Re I	20	—	—	—	3737.741	Ru	6	5	—	—
3743.484	Gd	25	25	—	—	3740.427	Ce	2	—	—	—	3737.736	Ce	10	2	—	—
3743.482	Fe	4	10	—	—	3740.32	Tb	15	8	—	Ed	3737.670	Pr	10	7	—	—
3743.365	Cu I	40	40	—	—	3740.279	Er	10	3	—	—	3737.65	Ho	6	10 h	—	Ex
3743.363	Fe I	200	150	—	—	3740.27	Eu	8	2	—	—	3737.554	Cr	—	18	—	—
3743.322	Ru	6	5	—	—	3740.251	Fe	70	35	—	—	3737.516	Ce II	5	—	—	—
3743.09	Tb	15	8	—	Ed	3740.241	V I	100	10	—	—	3737.513	Th	5	1	—	—
3743.004	Th	8	1	—	—	3740.195	Co I	60	—	—	—	3737.472	Sm II	2	2	—	—
3742.968	Cr I	25	10	—	—	3740.133	Ce	6	—	—	—	3737.435	V I	2	2	—	—
3742.94	Ir	2	3	—	—	3740.096	Re I	50 W	—	—	—	3737.401	Ru I	12	12	—	—
3742.925	Th	20	8	—	—	3740.074	Dy	6	2	—	—	3737.392	Zr I	3	2	—	—
3742.784	Ru	50	50	—	—	3740.061	Fe	8	4	—	—	3737.37	Eu	2	—	—	Kn
3742.685	W	15 d	12 d	—	—	3740.049	Ir I	2	—	—	Ab	3737.273	Rh	50	10	—	—
3742.67	Ta	2 h	—	—	Ks	3740.048	Gd	50	50	—	—	3737.254	U	8	10	—	—
3742.643	Er	20	12	—	—	3740.036	Ce	3	—	—	—	3737.20	Xe	—	[3 wh]	—	Hu
3742.624	Fe I	50	25	—	—	3739.998	Sm	5	—	—	—	3737.134	Sm	10	3	—	—
3742.56	Ir I	2	—	—	—	3739.99	Zn	20	—	—	Vs	3737.133	Fe I	1000 r	600	—	S
3742.43	Tb	8	3	—	Ed	3739.95	In	—	3	—	—	3737.12	Rh I	50	1	—	—
3742.389	Cb	30	50	—	—	3739.95	Sb	—	4 h	—	Sp	3737.020	Ce	3	—	—	—
3742.353	U	6	4	—	—	3739.947	Pb	150	60 h	—	—	3736.949	Th	5	5	—	—
3742.34	Eu	3 W	—	—	Kn	3739.947	Ce	8	—	—	—	3736.913	Ce	2	1	—	—
3742.309	Ce	2	3	—	—	3739.92	O II	—	[35 I]	—	Fl	3736.901	Ca II	12	50	—	IWg
3742.285	Mo	20	—	—	—	3739.89	Rn I	—	[25]	—	Rs	3736.899	Mn	25	25	—	—
3742.280	Ru I	70	100	—	—	3739.86	I	—	[7]	—	Ke	3736.834	Re	15	—	—	—
3742.27	Ir	25	2	—	—	3739.795	Cb	100	200	—	—	3736.813	Ni I	300	15	—	—
3742.269	Re	15	—	—	—	3739.79	O II	—	[10 I]	—	Mh	3736.798	Ru	3	—	—	—
3742.260	Pr	4	2	—	—	3739.788	Th	20	5	—	—	3736.787	Ti	10	2	—	—
3742.249	Th	20	10	—	—	3739.782	Ni I	2	—	—	—	3736.759	Ta	35	3	—	—

3736.7—3728.9 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3736.751	Ir	2	-	-	3734.21	Dy	4	2	Ed	3731.496	Pr	3	2	-
3736.653	Ir I	2	-	Ab	3734.141	Co I	70	-	-	3731.46	Sm	-	8 d	-
3736.603	U	2	-	-	3734.13	Tm	150	50	Me	3731.453	U	12	-	-
3736.508	Zr	2	2	-	3733.059	Ce	2	-	-	3731.42	La II	2	8	-
3736.497	Pr	20	20	-	3734.026	Pr	4	2 h	-	3731.40	Ho	8	6	Ex
3736.480	Ir	2	-	Ab	3733.92	Ca	-	2	Ad	3731.378	Fe	40	20	-
3736.476	U	2	-	-	3733.910	Al II	-	[5]	Sy	3731.359	Ir	50	50	-
3736.469	Ce	-	3	-	3733.84	Mo	-	25	-	3731.35	Dy	5	2	m
3736.44	Nd	-	4	-	3733.788	Hf	12	5	-	3731.278	Co I	18	3	-
3736.415	La II	-	6	-	3733.785	Ti I	10	2	-	3731.273	Er	15 a	4	-
3736.402	Ce	3	3	-	3733.773	Ce	2	-	-	3731.264	Zr II	10	25	-
3736.40	Mo	-	20 l	-	3733.76	Er	2	-	-	3731.26	Eu	10 w	1 w	-
3736.35	Ho	6	2	Ex	3733.752	U	3	1	-	3731.260	Sm II	50	10	-
3736.333	Ob	3	5 h	-	3733.749	Mo	4	1	-	3731.258	Ce	2	1	-
3736.28	Be I	10	-	Ps	3733.73	Cl II	-	[10]	Ks	3731.218	Nd	6	1	-
3736.26	Eu	4 w	-	-	3733.66	Eu	8 w	2 w	-	3731.18	Xe II	-	[10]	Hu
3736.215	W	5	10	-	3733.622	Cb	10	10	-	3731.17	Ce	2	1	-
3736.20	Tm	3	8	Me	3733.612	V	-	10	-	3731.035	V I	4	-	-
3736.174	Mo	4	1	-	3733.582	U	6	2	-	3731.017	Ta	50	3	-
3736.060	Ce	3	2	-	3733.517	Ce	2	-	-	3730.95	Tb	15	-	Ed
3736.038	Eu	6	1	-	3733.491	Co I	150	-	-	3730.947	Fe	50	30	-
3736.029	U	3 h	-	-	3733.404	Mo	10	10	-	3730.936	Pr	15	2	-
3736.024	V I	3	20	-	3733.34	Se I	-	[20]	Rd	3730.904	Ru	3	5	-
3735.970	Sm II	50	8	-	3733.324	Cb	10 d	8	-	3730.88	I I	-	[5]	Ke
3735.95	Eu	5	-	-	3733.322	Ta	-	3 h	-	3730.857	Gd	100 W	100	-
3735.94	O II	-	[10]	Fl	3733.319	Fe I	400	300	S	3730.831	U	-	4	-
3735.928	Co I	200 R	-	-	3733.26	P	-	[50]	Gu	3730.81	Tm	15	5	Me
3735.912	Ce	2	-	-	3733.23	Eu	2 w	-	Kn	3730.807	Cr I	60	12	-
3735.909	Mo	5	3	-	3733.108	Ce	2	-	-	3730.753	Th	10	8	-
3735.851	La II	20	10	-	3733.092	Gd	20	20	-	3730.751	Ni I	25	-	-
3735.83	Br	-	[6]	Ks	3733.069	U	8	6	-	3730.731	Sm	15	-	-
3735.78	Kr II	-	[40 hl]	Me	3733.054	Nd	2	2 h	-	3730.731	Os	40	12	-
3735.773	Ce	2	-	-	3733.049	Ru	10	3	-	3730.679	Ce	2	2	-
3735.760	Pr	2	2	-	3733.030	Mo	10	10	-	3730.64	S	-	[5]	Hn
3735.75	Ba II	1	2	Rs	3733.027	Pr	40 d	20	-	3730.599	Er	8 d	-	-
3735.671	Ti	15	4	-	3732.987	He I	-	[3]	Ps	3730.592	Ru I	2	5	-
3735.622	Mo	5	5	-	3732.92	Kr II	-	[6]	Me	3730.578	Pr	30 W	10	-
3735.62	Eu	3 W	-	-	3732.886	Pr	5	2	-	3730.578	Nd	8	10	-
3735.599	Nd	10	50	Kn	3732.861	He I	-	[10]	Ps	3730.559	Mo	5	30	-
3735.599	Ce	3	4	-	3732.850	Os	200 R	5 h	-	3730.485	Co I	200 r	-	-
3735.538	Nd	10	-	-	3732.805	Mo	10	10	-	3730.44	Ir	25	4	-
3735.536	Os	20	10	-	3732.765	Ru	4	-	-	3730.433	Ru I	12	70	-
3735.528	Th	8	1	-	3732.761	Nd	6	8	-	3730.427	W	10	12	-
3735.499	Ir	-	-	Ab	3732.758	V	70 R	500 R	-	3730.390	Fe	70	40	-
3735.49	A	-	[5]	Rt	3732.750	Ta	3	1	-	3730.383	Th	15	3	-
3735.4	Rn	-	[5]	Wo	3732.73	Eu	5 W	1 Wh	-	3730.334	Ce	10	3	-
3735.330	Fe I	30	20	-	3732.708	Mo	10	10	-	3730.196	Ir	2	-	Ab
3735.329	Re I	40	-	-	3732.668	Gd	5	-	-	3730.183	V I	15	3	-
3735.281	Rh I	70	2	-	3732.618	U	10	6	-	3730.131	U	2	3	-
3735.224	Nd	2	-	-	3732.61	Kr II	-	[15 h]	Me	3730.10	Sn	-	5 Wh	-
3735.169	V	3	25	-	3732.59	Ho	6	2 h	Ex	3730.04	Ga	-	20	-
3735.021	Ru	4	-	-	3732.582	Ce	2	2	-	3730.01	Mo	-	20	-
3735.02	Sn	-	5	Ar	3732.579	Ir	20	3	-	3729.980	Cs	-	[4]	Sv
3735.00	Re I	30 W	-	m	3732.55	Fr	3	7	-	3729.922	Ce II	8	1	-
3734.94	Ne II	-	[40]	Bl	3732.543	W	6	-	-	3729.91	Tb	15	15	Ed
3734.94	Tb	8	-	Ed	3732.535	Cs II	-	[4]	-	3729.821	U	8	15	-
3734.91	Ca	-	3	Ad	3732.479	Pr	5	-	Kn	3729.815	Ti I	500	150	-
3734.87	Ga II	-	[4]	-	3732.461	Ce	2	-	-	3729.755	Sm	20	5	-
3734.867	Fe I	1000 r	600	-	3732.399	Fe	200	150	S	3729.752	Eu	10	-	-
3734.867	Co I	60	-	-	3732.399	Co I	200 r	-	-	3729.723	Zr II	4	2	-
3734.862	Nd	6	4	-	3732.39	Tb	30	15	Ed	3729.697	Eu	10	1 h	-
3734.856	Ce	2	2	-	3732.275	Re I	30	-	-	3729.616	Cb	3	5	-
3734.8	Pb II	-	[10]	Ea	3732.259	U	6	3	-	3729.6	C	-	[6]	Jn
3734.80	Tb	8	-	Ed	3732.21	Eu	30 W	-	-	3729.53	Ho	6	4	Ex
3734.770	Ir	100	30	-	3732.186	Ce	2	-	-	3729.526	Er	25	7	-
3734.736	Cb	2	5	-	3732.16	Er	2	-	-	3729.501	Nd	8	4	-
3734.715	Al II	-	[2]	Sy	3732.09	Ho	6	2	Ex	3729.43	Eu	3	2 h	-
3734.703	Yb	25	5	-	3732.034	Cb	5	10	-	3729.404	Pr	30	4	-
3734.683	U	6	1	-	3732.032	Cr I	50	15	-	3729.34	Sr	-	5	Sd
3734.66	Eu	2 W	-	-	3732.029	Ru	6	8	-	3729.34	O II	-	[5]	Fl
3734.601	Th	8	10	-	3731.99	Ca	2	3	-	3729.29	A	-	[200]	Rt
3734.589	Er	4	-	-	3731.983	V	-	25	-	3729.23	Ni I	2	-	Ha
3734.567	Al II	-	[2]	Sy	3731.950	Al II	-	[2]	Sy	3729.220	Os	30	12	-
3734.50	Se I	-	[8]	Rd	3731.932	Mn	75	100	-	3729.201	W	5	6	-
3734.459	Er	4	-	-	3731.91	Fe	2	-	-	3729.20	Dy	2	2	m
3734.428	V I	10	5	-	3731.876	Ce	4	1	-	3729.137	Nd	10 d	4 d	-
3734.407	Pr	40	30	-	3731.871	Re I	25	-	-	3729.108	Pr	40	7	-
3734.372	H I	-	[8]	Rk	3731.82	Eu	10 W	2 W	-	3729.104	Hf	8	-	-
3734.370	Mo	15	5	-	3731.802	Os	15	10	-	3729.10	Eu	6 W	1 W	-
3734.353	I I	-	[18]	Ke	3731.794	Er	2	-	-	3729.06	Cd I	15 r	-	Fl
3734.337	Cs	-	[10]	Sv	3731.766	U	4	2	-	3729.035	V I	80	15	-
3734.332	Ir	5	-	-	3731.679	Ce	2	-	-	3729.001	Ce	5	-	-
3734.284	V I	3	-	-	3731.67	Kr II	-	[2 h]	Me	3728.98	La II	-	2 h	-
3734.23	Eu	5 W	-	-	3731.539	Ob	4	8	-	3728.96	Tb	8	3	Ed
3734.211	Ce	2	-	-	3731.51	Tb	8	-	Ed	3728.933	Ni I	2	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3728.926	Sm	10 w	4	-	3726.287	U	2	10	-	3723.645	In II	-	[25]	Ps
3728.889	Mn	75	100	-	3726.236	Sm	3	1	-	3723.631	Ti II	4	15	-
3728.860	U	6	6	-	3726.236	Ob	30	100	-	3723.62	P II	-	[30]	Gu
3728.855	Ir I	3	-	Ab	3726.220	Mo	4	5	-	3723.583	Pr	7	2	-
3728.841	Co I	18	-	-	3726.096	Ru	12	60	-	3723.514	Mo	5	8	-
3728.83	Pb I	-	20	Sx	3726.06	W	-	6	-	3723.506	Nd	30	20	-
3728.823	Ta	8	-	-	3726.038	U	12	1	-	3723.478	U	1	3	-
3728.747	U	4	-	-	3726.019	Ce	5	-	-	3723.444	Cb	1	30	-
3728.74	Dy	4	2	m	3725.99	Ho	6	4	Ex	3723.407	In II	-	[35]	Ps
3728.676	Ti I	15	5	-	3725.976	Cr	2	2 h	-	3723.395	Cr	-	15	-
3728.667	Fe I	18	10	-	3725.90	Dy	5	2	m	3723.324	V I	40	10	-
3728.666	Rb	-	[20]	Rr	3725.841	Th	5	5	-	3723.291	Th	10	8	-
3728.66	P II	-	[50 d]	Gu	3725.767	U	2	1	-	3723.218	V	5	15	Me
3728.65	Eu	2 w	-	-	3725.767	Re I	40 h	-	-	3723.205	In II	-	[35]	Ps
3728.65	Tb	8	3	Ed	3725.764	Ca	2	4	-	3723.204	Zr I	3	-	-
3728.501	Mo	10	10	-	3725.74	Eu	2 w	-	-	3723.104	Cb	2	1	-
3728.470	Sm II	100	100	-	3725.71	Cl	-	[4]	Bl	3723.073	Ta	18	1	-
3728.46	Ca	2	3	Ad	3725.675	Ce	40	10	-	3723.04	Tb	15	3	Ed
3728.457	Ir I	4	-	-	3725.651	U	3	15	-	3723.007	Mo	-	20	-
3728.435	U	-	8 h	-	3725.571	Ta	5 h	-	-	3722.950	Cb	8	3	-
3728.423	Ce	50	10	-	3725.556	Mo	20	20	-	3722.793	Sb II	40 Ws	50	-
3728.411	Os	20	5	-	3725.490	Fe	15	8	-	3722.759	Ce	12	2	-
3728.341	V	20	150	-	3725.487	Gd	50	50	-	3722.747	Ir I	30	5	-
3728.301	Mo	10	5	-	3725.486	Ru I	8	5	-	3722.68	U	10	10	-
3728.279	W	7	8	-	3725.44	Dy	6	4	m	3722.65	Hf	-	2	Me
3728.23	Eu	5 w	-	-	3725.396	Th	10	1	-	3722.62	Tb	3	8	Ed
3728.23	Se	-	[20]	Bt	3725.394	U	1	8	-	3722.61	Eu	40 W	10	-
3728.213	Hg	-	[2]	St	3725.385	Ir I	50	20	-	3722.601	V I	5	2	-
3728.182	Ce	5	1	-	3725.32	Tb	8	3	Ed	3722.58	Lu	3	-	Me
3728.162	Sm	15	2	-	3725.284	Os	15	10	-	3722.566	Cb	-	60 h	-
3728.130	Nd	6	8	-	3725.219	Cb	30 w	10 w	-	3722.566	Ti I	100	60	-
3728.111	Ta	7	-	-	3725.195	Ce	2	-	-	3722.564	Fe I	500	400	S
3728.04	Kr II	-	[7 hl]	Me	3725.165	Ti I	150	60	-	3722.563	Sm	40	-	-
3728.032	Ir	60	10	-	3725.163	W	7	8	-	3722.554	Ce	2 h	-	-
3728.030	Ru I	100	150	-	3725.071	U	4	10	-	3722.484	Ni I	200	20	-
3728.023	Ce	8	5	-	3725.065	Tm	60	15	Me	3722.434	Ir	2	6	Ab
3727.999	Er	5	3	-	3725.052	La II	25	15	-	3722.320	Cb	3	5	-
3727.99	Dy	15	3	m	3725.034	Pr	15	8	-	3722.312	Ru	5	2	-
3727.903	Th	15	5	-	3725.013	Ta	5	-	-	3722.306	Mo	3	4	-
3727.86	W	6	7	-	3724.99	Eu	250	50	Kn	3722.293	Yb	7	60	-
3727.845	Ir I	8	-	Ab	3724.988	U	6	8	-	3722.291	Ce II	15	1	-
3727.819	U	3 h	2	-	3724.969	Ru I	12	12	-	3722.247	W	12	15	-
3727.815	Fe I	5	3	-	3724.942	Rh I	5	2	-	3722.195	V I	40	40	-
3727.717	Zr II	2	4	-	3724.92	Tb	8	3	Ed	3722.192	Th	35	25	-
3727.69	Mo	25 w	25 w	-	3724.916	Er	7	1	-	3722.098	Ce	10	1	-
3727.633	Ce	3	-	-	3724.91	Dy	4	-	m	3722.066	Pr	4	2	-
3727.621	Fe I	200	150	S	3724.9	Bi II	-	[60]	Cf	3722.035	Gd	50	30	-
3727.492	Re	8	-	-	3724.9	Cs	-	[4]	Ba	3722.024	Sm	10	4	-
3727.454	U	5	-	-	3724.897	Sm II	40	15	-	3722.021	Ir I	10	2	-
3727.390	Ir	2	-	Ab	3724.877	Nd	15	2	-	3721.998	V I	70	20	-
3727.371	Sm II	4	2	-	3724.827	Ni I	4	-	-	3721.959	Os	30	15	-
3727.359	Cr	-	5 h	-	3724.812	I	-	[50]	Ke	3721.949	Ce	2	-	-
3727.35	Xe	-	[2 h]	Hu	3724.772	La	2	2	-	3721.948	H I	-	[6]	Rk
3727.345	V II	40	200	-	3724.76	Yt	2	1	m	3721.932	Ru	3	-	-
3727.331	Ce	3	5 wh	-	3724.755	Pr	2	2	-	3721.921	Fe	15	10	-
3727.30	O II	-	[50]	Mh	3724.739	Th	30	20	-	3721.86	Ne II	-	[4]	Bn
3727.271	Th	5	8 h	-	3724.636	Ce II	12	2	-	3721.842	Sm	100	50	-
3727.230	Cb	5	10	-	3724.574	Ti I	100	50	-	3721.831	Th	40	30	-
3727.162	Th	3	-	-	3724.51	A II	-	[5]	Rt	3721.83	Ho	8	4 h	Ex
3727.095	Fe I	30	10	-	3724.45	Ho	6	4	Ex	3721.82	Eu	2	-	Kn
3727.09	Yt II	3	8 h	-	3724.449	Er	15	4	-	3721.812	Ce	5	-	-
3727.08	Ne II	-	[125]	Bn	3724.42	Dy	15	15	Ed	3721.746	Nd	4	1	-
3727.054	Ti I	2	-	-	3724.380	Fe I	200	150	S	3721.722	U	10	-	-
3726.955	Ce	15	5	-	3724.380	Pr	2	-	-	3721.671	Pr	2	-	-
3726.931	Mn	5	5	-	3724.321	Mo	2	3	-	3721.648	Ce	4	1	-
3726.928	Ir	30	2	-	3724.32	Lu	2 h	-	Me	3721.636	Ti II	60	125	-
3726.926	Ru I	100	150	-	3724.233	U	8	-	-	3721.611	Fe	6	4	-
3726.925	Fe I	100	70	-	3724.221	Ce	2	-	-	3721.517	Cb	4	3	Me
3726.92	Eu	4 w	1 w	-	3724.211	Yb	15	50	-	3721.515	Pr	10	3	-
3726.865	U	2	8	-	3724.20	Eu	2	-	-	3721.510	Fe I	10	4	-
3726.800	Sm II	100 r	3	-	3724.175	Pr	3	-	Kn	3721.507	Hf	10	-	-
3726.793	W	3	6	-	3724.106	Ti II	4	18	-	3721.483	Ir I	15	4	-
3726.746	Re	15 d	-	-	3724.017	Sm	3	2	-	3721.465	Er	8	-	-
3726.730	Th	30	20	-	3723.894	Nd	8	-	-	3721.402	Th	8	3	-
3726.657	Co I	30	-	-	3723.88	Fe	2	-	-	3721.398	Yt I, II	8	3	-
3726.62	Eu	3 w	-	-	3723.877	W	6	7	-	3721.395	Fe I	3	2	-
3726.590	Mo	3	3	-	3723.87	Ca	-	5	Ad	3721.358	V I	10	6	-
3726.500	Re	8	-	-	3723.87	Pb I	-	2	Sx	3721.35	Kr II	-	[150 hl]	Me
3726.49	Hf	6	3	m	3723.84	Eu	5 w	1 w	-	3721.344	K II	-	[20]	Dm
3726.456	Ce II	6	-	-	3723.836	Ce	1	2	-	3721.33	Ho	8	4	-
3726.37	Eu	3 w	1	-	3723.814	Mo	20	30 h	-	3721.330	Nd	15	15	-
3726.345	Nd	10	2	-	3723.696	Th	10	8	-	3721.271	Fe I	7	4	-
3726.319	Mo	4	5	-	3723.686	Gd	5	10 h	-	3721.27	Pr	8	2	-
3726.308	Pr	20	4	-	3723.657	U	3	10	-	3721.192	Fe	1	1	-
3726.3	bh Zr	5	-	L	3723.656	Ce	12	-	-	3721.18	Ba I	2	-	-

3721.1—3713.6 A.

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
		Arc	Spk., [Dis.]			Arc	Spk., [Dis.]			Arc	Spk., [Dis.]
3721.12	W	-	12	3718.380	Ce	15	5	3716.081	In II	-	[18]
3721.060	V	-	2	3718.34	Pb II	-	2	3716.08	Tb	15	3
3721.020	Sm	4 h	1	3718.339	Os	30	10	3716.079	W II	9	18
3720.85	Ba I	2	-	3718.332	In II	-	[25]	3716.070	Mo	5	5
3720.83	Pr	10	8	3718.316	W	-	6	3716.048	In II	-	[18]
3720.821	Ir I	6	-	3718.218	In II	-	[18]	3716.004	In II	-	[10]
3720.80	Xe II	-	[20]	3718.211	Ir	3	-	3715.972	Cb	3	5
3720.776	Th	5	-	3718.21	A II	-	[15]	3715.956	Er	5 d	-
3720.771	Cu I	10	1 h	3718.190	Ce I, II	15	5	3715.917	W	3	7
3720.75	La II	-	3 h	3718.167	Th	15	10	3715.915	Fe I	80	50
3720.74	Ho	6	4	3718.160	V II	5	70	3715.914	Gd	10	-
3720.74	Pt	5	-	3718.108	Yt I	12	4	3715.912	Ce	4	-
3720.695	Eu	4 w	-	3718.106	U	8	12	3715.87	Ca	2	4
3720.644	Sm	2	-	3718.072	Ta	2	-	3715.85	P II	-	[50]
3720.595	Ce	2	-	3718.02	Kr II	-	[300 hl]	3715.795	Ti I	15	1
3720.572	Sm	4	4	3718.016	Pr	3 h	2	3715.69	Xe II	-	[2 wh]
3720.54	Nd	8	8	3717.98	La II	3	3	3715.680	Nd	20	20
3720.513	W	8	10	3717.94	Cl II	-	[15]	3715.676	Ir	5	-
3720.456	Cb	5	100 h	3717.926	Os	10	12	3715.669	U	3	6
3720.43	A	-	[10]	3717.92	Tm	100	10	3715.65	Eu	8 w	-
3720.40	Ca	-	3	3717.841	Pr	8	3	3715.647	Mo	5	5
3720.394	U	6	10 h	3717.832	Th	20	10	3715.640	Rb II	-	[2]
3720.384	Ti I	40	10	3717.80	W	-	12	3715.615	Pr	15	2
3720.380	Ce	2	2	3717.800	Hf	20	8	3715.568	Th	5	-
3720.36	Tb	8	-	3717.767	Ce	3	-	3715.562	Ru	12	8
3720.31	As II	-	15	3717.729	U	6	-	3715.54	Dy	4	4
3720.309	Th	15	10	3717.69	Eu	18 w	2	3715.524	La II	100	50
3720.254	Mo	10	40	3717.682	Ru	6	5	3715.499	Ni I	2	-
3720.222	Pr	15	6	3717.62	P II	-	[70]	3715.470	U	6	12
3720.132	Os I	80	40	3717.542	Cb	10	8 h	3715.470	V	70	400 R
3719.969	Th	2	1 h	3717.487	Gd	100 w	50	3715.466	Ce	10	2
3719.946	Ce	2 w	-	3717.484	Ce	8	1	3715.428	Cr	-	30
3719.935	Fe I	1000 R	700	3717.482	Nd	2	-	3715.400	Ti I	40	2 h
3719.93	Ba I	2	-	3717.47	Tb	8	3	3715.393	Nd	12	8
3719.797	Ce II	15 s	5	3717.425	U	10	8	3715.28	Dy	4	4
3719.74	Mo	-	30	3717.396	Ti I	80	50	3715.21	Sn II	-	2 h
3719.72	Tm	10	4	3717.30	Sr II	1	5	3715.186	Cr II	6	20
3719.70	Sb II	-	8	3717.29	Dy	3	-	3715.184	U	3	1
3719.692	Mo	3	-	3717.29	Re I	150 W	-	3715.15	Er	2 d	-
3719.69	U	1 h	8	3717.262	Er	9	-	3715.143	Ce	8	1
3719.635	Cb	-	50 w	3717.259	Ti I	6	1	3715.09	Tb	8	3
3719.595	Nd	10	8	3717.2	Rn	-	[10]	3715.047	Nd	10	10
3719.553	Mo	5	3	3717.20	Xe II	-	[10]	3715.047	W	10	7
3719.522	Os I	40	12	3717.17	A	-	[10]	3715.04	Kr II	-	[12 h]
3719.464	Gd	40	40	3717.096	Sc	4	4	3715.02	Re	5	-
3719.451	Sm	50	10	3717.095	W	12 d	10 d	3714.947	U	5	8
3719.45	Tb	30	8	3717.066	Cb	8	1000	3714.911	Eu I	40	2
3719.436	Th	30	10	3717.03	Ca	-	3	3714.858	La II	60	40
3719.435	Pr	15	10	3717.012	U	1	4	3714.858	W	10	7
3719.430	Ce	8	-	3717.009	Zr II	2	-	3714.852	Cb	3 h	2
3719.418	Ta	3	-	3717.004	Ru I	30	25	3714.828	Rh I	3	2
3719.405	W	12	10	3716.991	Cb	10 W	-	3714.808	Nd	8 d	6 d
3719.329	Ru	20	25	3716.980	Pr	10 h	2 h	3714.778	Zr II	15	10
3719.300	Sm	3	-	3716.97	Mo	-	3 h	3714.772	Ce	10	2
3719.295	Er	4 d	-	3716.93	Dy	5	5	3714.758	U	8	8
3719.293	U	12	-	3716.930	Ce II	10	2	3714.74	A	-	[3]
3719.279	Hf II	15	30	3716.91	Yt II	2	5 h	3714.727	Nd	8 d	6 d
3719.167	Eu	30	-	3716.91	Eu	10 w	2	3714.624	Ru I	8	1
3719.081	Ce II	3	-	3716.870	Mo	4	25	3714.564	W	-	10
3719.047	Mo	-	20	3716.783	U	6	8	3714.553	Mo	5	4
3718.930	Mn	75	100	3716.780	Sm	5	-	3714.526	Ce	3	-
3718.912	V	20	5	3716.738	W	9	6	3714.399	U	-	3
3718.909	Pd I	300	200	3716.714	Ce	2	-	3714.393	Th	8	5
3718.880	Sm II	100	5	3716.594	K II	-	[20]	3714.31	Yt II	2	3
3718.877	Pr	3	3	3716.585	Th	8	1	3714.30	Br	-	[8]
3718.844	U	-	4	3716.577	Nd	8	6	3714.293	La I	10	2
3718.843	Zr II	9	9	3716.54	U	-	2 h	3714.240	W	9	7
3718.842	Hf	-	3	3716.531	Cr	20	6	3714.194	Nd	20	15
3718.836	In II	-	[40]	3716.448	Fe I	150	100	3714.133	Zr I	20	-
3718.707	In II	-	[18]	3716.43	Tb	15	3	3714.057	Pr	50	20
3718.7	Li I	30	-	3716.369	Gd	150 w	125	3714.05	Pb II	-	10
3718.698	Sm II	8	-	3716.365	Ce I, II	15	10	3714.045	Ir	2 h	2 h
3718.660	Th	20 h	8	3716.336	Os	12	10	3714.03	Er	3 h	-
3718.634	In II	-	[26]	3716.284	In II	-	[25]	3713.988	Ce	8	-
3718.63	Kr II	-	[200 hl]	3716.255	Th	5	1	3713.96	Mo	-	40
3718.614	U	4	8	3716.233	In II	-	[40]	3713.957	V I	60	10
3718.611	Ru	2	9	3716.209	Cb	30 W	10 w	3713.851	Er	10	-
3718.60	Er	2	-	3716.198	Pr	4	3	3713.84	Dy	6	4
3718.523	Cb	2	3	3716.183	In II	-	[18]	3713.817	Cb	8	5
3718.479	Mo	5	5	3716.179	Ru	12	8	3713.774	U	5	2
3718.455	Ta	3	1	3716.162	I II	-	[5]	3713.734	Ti I	15	1
3718.44	Tb	15	3	3716.15	Kr II	-	[4]	3713.726	Os	100	20
3718.408	Fe I	80	50	3716.135	U	18	-	3713.72	Cb	-	5 h
3718.400	Ru	8	2	3716.130	In II	-	[25]	3713.72	Zn	-	2 h
3718.390	In II	-	[25]	3716.091	Zr	4	2	3713.695	Nd	25	20

Wave-length	Element	Intensities Arc Spk., [Dis]	R	Wave-length	Element	Intensities Arc Spk., [Dis]	R	Wave-length	Element	Intensities Arc Spk., [Dis]	R
3713.662	Ce II	5	-	3711.15	Ta	5	-	3708.227	Dy	20	10
3713.649	U	2	-	3711.123	V	-	80	3708.106	In II	-	[10]
3713.60	Al	-	10 h	3711.099	Pr	8	3	3708.090	Ir	8	2
3713.583	Gd	100 W	80	3711.074	Na II	8	[60]	3708.067	Mo	2	3
3713.544	La II	200	60	3711.001	Ce	2	-	3708.05	Au	-	5
3713.470	Mo	8	8	3710.95	Lu	3	-	3708.001	In II	-	[10]
3713.459	Eu	50	2	3710.908	U	3	8	3707.931	W	20	20
3713.456	Ce	5 w	2 w	3710.881	Eu	35 l	30 h	3707.925	Fe I	80	60
3713.429	Rh I	4	3	3710.869	Sm II	100 r	7	3707.92	Sn	-	2 h
3713.358	Cb	-	10 h	3710.79	Ta	7 wh	-	3707.918	Cb	3 W	100 W
3713.278	Pr	12	3	3710.785	U	4	2	3707.886	Ce	3	-
3713.23	Si	5	2	3710.774	Cs	-	[4]	3707.850	Sm	20	-
3713.18	Re	5	-	3710.753	Ca	-	3	3707.824	Fe I	80	50
3713.084	Ne II	-	[250]	3710.75	Ho	8	8 h	3707.804	Cb	5	-
3713.039	Ce	3	-	3710.73	Dy	4	2	3707.735	Nd	8	4
3713.03	A II	-	[3]	3710.60	Cr	2	2	3707.681	Ce	3	-
3713.028	Ti	12	1	3710.59	La II	3	2	3707.648	U	1	10
3713.026	Ir	20	-	3710.534	U	3	4	3707.644	Er	15 d	2 d
3713.022	Rh I	100	100 r	3710.519	Sb II	2	5	3707.628	Sm	3	-
3713.014	Cb	100	80 h	3710.45	P II	-	[30 h]	3707.602	Ce	3	-
3712.964	Fe	5	1	3710.448	Cb	15	20	3707.561	Fe	2	1
3712.958	Zr I	2	-	3710.365	F	-	[10]	3707.54	Tb	15	-
3712.949	Cr II	12 s	125	3710.316	Ru	4	-	3707.531	Ti I	100	10
3712.947	Mo	8	8	3710.31	Yb	4	6	3707.52	W	3	10
3712.94	Re	6	-	3710.308	U	8	1	3707.468	Co I	30	-
3712.90	Ho	6	4	3710.300	Sm	25	15	3707.459	Fe	3	1
3712.86	Dy	2	2	3710.290	Er	15 wh	8 wh	3707.429	Th	10	5
3712.838	Os	50	12	3710.290	Yt II	80	150	3707.416	Dy	5	2
3712.759	Sm II	100	100	3710.29	Eu	20 w	1 wh	3707.40	Eu	8 w	5
3712.74	O II	-	[25]	3710.289	W	4	5	3707.387	Ce	10	-
3712.724	Ce	2	1	3710.253	Ce	2	1	3707.363	Hf	3	2
3712.714	Gd	200 W	250	3710.186	Ti I	6	-	3707.3	air	-	3
3712.566	U	6	-	3710.168	U	1	5	3707.290	U	1	2
3712.554	Cb	3	3	3710.142	Mo	20	15	3707.24	Pr	8	6
3712.539	V	-	20	3710.09	Cr	4	2	3707.174	Nd	2	-
3712.538	Th	15	8	3710.080	Dy	20	5	3707.172	Ir	6	-
3712.50	Eu	3 W	-	3710.012	Pr	6	2	3707.171	Mo	5	5
3712.476	Ir I	30	10	3710.01	Eu	5	-	3707.165	Sm II	10	2 h
3712.40	Eu	7	-	3709.961	Ti I	80	25	3707.049	Fe I	150	100
3712.392	Er	20	2	3709.937	Re I	40	-	3707.047	Cb	7 w	-
3712.37	Ca	2	3	3709.933	Ce	25	10	3706.993	Th	8	5
3712.369	Nd	10	4	3709.90	A	-	[5]	3706.982	Ir	30	8
3712.345	Pr	12	3	3709.878	U	2	2	3706.976	Sm	9	8
3712.308	U	5	-	3709.742	Cb	2	2	3706.94	A II	-	[5]
3712.295	Ru	30	10	3709.673	Th	5	3	3706.936	Ce	4	2
3712.214	W	-	18	3709.665	Pr	3	-	3706.863	Ce	2	-
3712.18	Eu	4	1 h	3709.665	Fe	4	4	3706.82	Au	-	15 h
3712.180	Co I	40	8	3709.64	Ne II	-	[40]	3706.769	Th	15	10
3712.120	Nd	25	10	3709.588	Ce	5	-	3706.766	Pr	25	12
3712.106	Sm	20	8	3709.533	Fe	6	6	3706.752	Sm II	10	8
3712.098	Ce	2 l	-	3709.526	Sm	10	6	3706.732	U	2	-
3712.052	Mo	4	4	3709.514	I II	-	[3]	3706.658	Mn	5	5
3712.009	Co I	20	4 h	3709.46	U	-	3 d	3706.632	Zr I	10	-
3711.990	Cu	2	-	3709.417	Cb	5	10	3706.587	Ta	5	-
3711.98	H I	-	[5]	3709.333	V	-	25	3706.57	Eu	12 W	-
3711.946	Zr II	2	-	3709.30	Tb	15	-	3706.556	Os	50	15
3711.851	U	4	5	3709.286	Ce	25	-	3706.533	U	6	-
3711.851	Os	15	10	3709.257	Zr II	50	30	3706.527	Pt	15	4
3711.825	Er	7	-	3709.249	Fe I	600	400	3706.524	Er	12 d	-
3711.779	Cb	4	5	3709.248	Ag I	10	3	3706.34	Tb	15	-
3711.758	Ir	2	-	3709.247	Cb	5	30	3706.326	Ta	3 h	2 h
3711.750	V	-	10	3709.145	Os	4	1	3706.3	Eu	3	-
3711.74	Tb	200	30	3709.097	Ru I	5	-	3706.226	Ti II	30	125
3711.687	Ce II	3	-	3709.024	Sm	8	-	3706.16	Lu	2	-
3711.66	Eu	10 w	1 h	3708.897	Cb	3	4	3706.13	Pb I	-	10
3711.652	Co I	35	-	3708.823	Co I	100	-	3706.078	Mn	75	-
3711.65	Dy	6	6	3708.787	Sm	2	-	3706.055	Ta	2	-
3711.64	Xe II	-	[15 wh]	3708.764	Re	15	-	3706.05	P II	-	[150 w]
3711.628	Th	8	3	3708.760	Th	8	5	3706.035	V I	50	50
3711.628	Ce	2 w	2	3708.75	Tb	8	8	3706.03	Ho	-	10
3711.545	Nd	2	1	3708.721	V I	100	60	3706.026	Ca II	15	40
3711.545	Sm II	10	10	3708.709	Ce	2	-	3705.995	Sm	4	-
3711.526	Re I	15	-	3708.687	Pr	2	-	3705.983	U	6	10
3711.509	Mo	5	5	3708.683	Ir	8	2	3705.901	Sr I	30	10
3711.485	W	6	3	3708.66	Yb	2	4	3705.85	Ga II	-	[2]
3711.441	I I	-	[18]	3708.660	Sm II	50	25	3705.818	La II	50	80 h
3711.410	Fe	50	25	3708.648	Ti I	50	3	3705.776	Er	5 w	-
3711.340	Mn	10	-	3708.618	Ru	4	-	3705.69	Re I	5	-
3711.338	Cb	20	20	3708.602	Fe I	5	2	3705.605	Cb	2	-
3711.309	Th	30	20	3708.592	U	6	-	3705.569	Sm	8	1
3711.30	Ho	6	4	3708.555	Mo	5	5	3705.568	Ce	3	-
3711.282	Cr	-	12	3708.510	W	3	35	3705.567	Fe I	700	500
3711.225	Fe I	80	50	3708.410	Sm II	25	10	3705.486	W	10	10
3711.218	Pr	3	2	3708.37	Eu	10	-	3705.47	Cl	-	[3]
3711.153	Ir I	7	-	3708.246	In II	-	[18]	3705.411	Mo	4	3

3705.4—3698.2 A.

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities			
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
3705.407	V	—	5	—	—	3702.85	Yt	4	2	—	—	3700.57	Yb	4	—	—	—
3705.405	Hf II	15	25	—	—	3702.790	Ce II	10	5 w	—	—	3700.550	Ir I	2 h	—	—	Ab
3705.365	Ce	2	—	—	—	3702.763	Os	4	2	—	—	3700.536	Cu I	20	7	—	—
3705.357	Ru I	8	2	—	—	3702.74	Xe I	—	[2]	—	Me	3700.444	Nd	2	1	—	—
3705.34	W	—	7	—	—	3702.615	U	8	1	—	—	3700.431	Sm	2	—	—	—
3705.338	Pr	—	3 d	—	—	3702.588	Ce	4	—	—	—	3700.366	Re	2 h	—	—	—
3705.263	Ir	10	2	—	—	3702.57	Al	—	5 h	—	Gn	3700.352	Ru	8	3	—	—
3705.169	Ta	7	—	—	—	3702.553	Mo	10	150	—	—	3700.344	V	10	100	—	—
3705.140	He I	—	[3]	—	Ps	3702.506	Er	8	—	—	—	3700.299	Os	5 h	5 h	—	—
3705.063	Sm	15	2	—	—	3702.495	Fe I	20	7	—	—	3700.296	Mn	5	—	—	—
3705.06	Tb	15	3	—	Ed	3702.36	Hg I	—	[2]	—	Wd	3700.29	U	3	—	—	—
3705.059	Sn II	—	3	—	—	3702.36	Hf II	—	2 h	—	m	3700.277	Ta	—	10	—	—
3705.05	Eu	12	—	—	—	3702.35	Ho	10	6	—	Ex	3700.269	W	—	5	—	—
3705.048	Ce	5	2	—	—	3702.320	W	10	9	—	—	3700.26	Tm	150	80	—	Me
3705.040	U	6	8	—	—	3702.3	Eu	4	—	—	Kn	3700.248	Pr	6	—	—	—
3705.035	V I	100	70	—	—	3702.30	Au	—	5 h	—	—	3700.197	Sm	9	10	—	Kn
3705.003	He I	—	[30]	—	IMr	3702.292	Ti I	60	20	—	—	3700.14	Pt II	—	10	—	Sh
3704.994	Re I	20	—	—	—	3702.246	Ce	2	—	—	Kn	3700.130	Mn	10	—	—	—
3704.98	Eu	12 w	1 wh	—	—	3702.243	Co	200	—	—	—	3700.128	V	2	15	—	—
3704.977	Ce II	8	5	—	—	3702.240	Ru	6	3	—	—	3700.12	Tb	30	—	—	Ed
3704.972	Pr	15	8	—	—	3702.218	U	2	12 h	—	—	3700.098	U	3	—	—	—
3704.967	Th	10	8	—	—	3702.192	Ce	3	—	—	—	3700.09	S	—	[3]	—	Hn
3704.92	Hf	2	—	—	Me	3702.178	Mo	4	1	—	—	3700.090	Ir	2 h	—	—	Ab
3704.846	Tm	35	15	—	Me	3702.100	Re	10	—	—	—	3700.077	Ti	60	5	—	—
3704.845	Re I	20	—	—	—	3702.032	Mo	10	5	—	—	3700.019	Zr	9	—	—	—
3704.796	W	12	8	—	—	3702.031	Fe	50	30	—	—	3700.012	Mo	5	3	—	—
3704.79	Lu	—	3 h	—	Me	3702.027	I	—	[10]	—	Ke	3699.99	Ta	5	—	—	Ks
3704.699	V I	200 R	150 R	—	—	3702.02	Eu	3	—	—	Kn	3699.952	Pr	12	1	—	—
3704.674	Ce	6	—	—	—	3702.01	Si	—	6	—	Sy	3699.929	Cb	15 w	30 w	—	—
3704.658	U	1	2	—	—	3701.981	Nd	2	1	—	—	3699.920	Ce I, II	20 s	2	—	—
3704.531	La I	25	4	—	—	3701.866	Ce	4 w	—	—	—	3699.914	Pt I	80	5	—	—
3704.51	F II	—	[60]	—	Di	3701.848	Ru	5	—	—	—	3699.884	Th	5	1	—	—
3704.463	Fe I	125	100	—	S	3701.812	Pr	30	10	—	—	3699.87	Tm	10	6	—	Me
3704.462	Re	25	—	—	—	3701.81	Ne II	—	[12]	—	Bn	3699.857	U	4	1	—	—
3704.344	U	1	5	—	—	3701.807	La II	8	10	—	—	3699.85	Mo	—	25 d	—	—
3704.319	Pr	—	2	—	—	3701.80	Ho	4	6	—	Ex	3699.81	Yb	—	2	—	Me
3704.295	Ti I	70	25	—	—	3701.78	W	—	5	—	—	3699.748	Gd	200 W	250	—	—
3704.22	Ba I	2	2 h	—	—	3701.751	Nd	10	4 h	—	—	3699.744	Er	3	—	—	—
3704.216	Ta	3	—	—	—	3701.745	U	10	2	—	—	3699.740	Nd	20	10	—	—
3704.18	Hg I	20	20	—	—	3701.730	Mn	60	30	—	—	3699.724	U	4	5	—	—
3704.141	Cb	30	30	—	—	3701.724	Ce II	4	—	—	—	3699.716	Hf II	20	25	—	—
3704.14	Mo	—	20	—	—	3701.716	Ba	3	—	—	Sz	3699.70	Tb	8	3	—	Ed
3704.099	U	6	8	—	—	3701.697	Sm	20	1	—	—	3699.622	Rb II	—	[15]	—	Fr
3704.060	Co I	300 r	35	—	—	3701.62	Dy	6	10	—	Ed	3699.578	Cb	2	3	—	—
3704.03	Ca	3	4	—	—	3701.60	Ga	—	2	—	—	3699.56	Hf II	—	3	—	Me
3704.021	Fe	2	1	—	—	3701.596	Os	12	15	—	—	3699.556	La I	10	2	—	—
3703.996	Th	10	5	—	—	3701.57	Er	12 d	2 W	—	—	3699.506	Pr	40	10	—	—
3703.996	V I	5	2	—	—	3701.558	Sm II	5	4	—	—	3699.50	Yb	2	—	—	—
3703.92	Tb	70	100	—	Ed	3701.541	Ti	12	—	—	—	3699.476	V I	35	10	—	Sv
3703.914	Cb	15	20	—	—	3701.522	U	10	25	—	—	3699.475	Cs	—	[10]	—	—
3703.912	Ce	3	—	—	—	3701.517	Mo	5	2	—	—	3699.437	U	5	3 h	—	—
3703.9	Eu	5	3	—	Kn	3701.487	Nd	8	6	—	—	3699.415	W	10	12	—	—
3703.86	H I	—	[4]	—	Rk	3701.476	Pr	15	4	—	—	3699.404	Nd	10	2	—	Kn
3703.823	Fe	15	10	—	—	3701.442	Hg I	15	2	—	—	3699.37	S	—	[8]	—	Hn
3703.816	V	2	10	—	—	3701.43	Mo	—	3 W	—	—	3699.309	Rh I	4	2	—	—
3703.787	Th	8	—	—	—	3701.36	Tm	150	80	—	Me	3699.305	Ce	4	—	—	—
3703.696	Fe I	12	7	—	—	3701.336	Ta	25 s	—	—	—	3699.24	Eu	2 w	—	—	—
3703.652	U	3	2	—	—	3701.320	Ru	10	3	—	—	3699.2	Pb II	—	[10]	—	Ea
3703.602	W	10	9	—	—	3701.225	Ne	—	[40]	—	IHu	3699.176	Ce	8	—	—	—
3703.584	V I	200 R	100 R	—	—	3701.2	Rn	—	[2]	—	Wo	3699.141	Fe I	15	3	—	—
3703.555	Fe I	30	25	—	—	3701.197	Ce	3	—	—	—	3699.14	Yt	3	3	—	Me
3703.55	Eu	7	—	—	Kn	3701.18	Re	5 d	—	—	—	3699.135	Ce	6	1	—	—
3703.41	Zn	5	2 h	—	Vs	3701.178	Sm	3	3	—	—	3699.113	Mo	4	4	—	—
3703.366	Ce	2	—	—	—	3701.16	Eu	5 w	1 h	—	—	3699.110	V	2	5 h	—	—
3703.36	W	12	10	—	—	3701.15	Ca	—	2	—	Ad	3699.077	Cb	2	3	—	—
3703.342	Pr	12	1	—	—	3701.148	Hf II	15	40	—	—	3699.017	Co	8 h	—	—	—
3703.323	Yt II	4	10 w	—	—	3701.090	Fe I	300	200	—	—	3698.969	Er	10	—	—	—
3703.278	U	8	—	—	—	3701.015	Ce	3 w	1	—	—	3698.94	Dy	7	2	—	m
3703.258	Ta	7	—	—	—	3700.991	Ru	50	20	—	—	3698.832	Os	20	12	—	—
3703.247	Os	100	30	—	—	3700.988	Pr	20	8	—	—	3698.727	Pr	2	—	—	—
3703.241	Re I	40	—	—	—	3700.987	Th	5	1	—	—	3698.720	W	9	9	—	—
3703.235	Th	5	—	—	—	3700.981	V	1	15	—	—	3698.658	Ce II	20	1	—	—
3703.217	Al II	—	[18]	—	Sy	3700.926	Sm	50	4	—	—	3698.605	Fe	40	20	—	—
3703.21	Dy	3	—	—	Ed	3700.925	Nd	20	15	—	—	3698.595	Rh I	20	15	—	—
3703.206	Ru I	12	3	—	—	3700.921	Gd	10	—	—	—	3698.59	Yb	3	15	—	Me
3703.165	Cb	20	30	—	—	3700.909	Rh I	150 d	150 d	—	—	3698.530	Mo	5	5	—	—
3703.145	Nd	30	6	—	—	3700.771	Th	15	10	—	—	3698.45	Tb	8	—	—	Ed
3703.052	Zr	2	1	—	—	3700.742	Ce	3	—	—	—	3698.43	U	4 d	1 d	—	—
3703.017	U	2	2	—	—	3700.728	Er	10	2	—	—	3698.430	Ti I	5	—	—	—
3702.986	Ti I	20	5	—	—	3700.661	Pr	6	1	—	—	3698.41	Au	—	2	—	—
3702.933	Ru	5	—	—	—	3700.65	Nd	8	2	—	—	3698.395	Hf II	10	25	—	—
3702.9	air	—	3	—	m	3700.649	W	5	6	—	—	3698.364	Ce	10	2	—	—
3702.872	Th	10	20	—	—	3700.593	Sm II	50	30	—	—	3698.305	Th	12	10	—	—
3702.866	U	5	—	—	—	3700.59	Dy	5	2	—	m	3698.28	Dy	6	—	—	Ed
3702.85	Tb	50	200	—	Ed	3700.575	U	12	18	—	—	3698.260	Rh I	15	10	—	—

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3698.209	Er	3	-	-	-	3695.82	Sm	2	-	-	-	3693.364	Co I	18	-	-	-
3698.183	Ti I	10	8	-	-	3695.811	U	5	3	-	-	3693.363	Pr	30	8	-	-
3698.178	Cr	2	-	-	-	3695.69	Tb	8	-	-	-	3693.320	U	4	6	-	-
3698.17	Dy	10	30	m	-	3695.650	Fe	2	-	-	-	3693.232	Mo	3	-	-	-
3698.17	Tb	8	3	Ed	-	3695.646	I	-	-	[5]	-	3693.133	Nd	20	8	-	-
3698.167	Zr II	50	80	-	-	3695.61	Dy	4	2	-	-	3693.112	Co I	80	15	-	-
3698.166	Mo	15 h	5	-	-	3695.598	Zr	3 h	-	-	-	3693.089	Cr	10	5	-	-
3698.15	Fe	3	-	-	-	3695.55	Bi	-	50	-	-	3693.047	Ta	35 r	3 h	-	-
3698.125	Ce	12	1	-	-	3695.525	Rh	15	10	-	-	3693.032	Fe	15	7	-	-
3698.112	Th	8	2	-	-	3695.515	Fe I	1	-	-	-	3692.95	Tb	30	8	-	Ed
3698.102	Ir I	30	8	-	-	3695.51	I I, II	-	-	[2]	-	3692.91	U	5	10	-	-
3698.069	Pr	25	12	-	-	3695.462	Pr	4	-	-	-	3692.91	W	-	7	-	-
3698.045	Kr I	-	-	[6]	IHu	3695.419	Ce	2	-	-	-	3692.899	Sm	10	2	-	-
3697.997	Cr	-	40	-	-	3695.382	Ta	15	7 s	-	-	3692.812	Mn	50	50	-	-
3697.95	Eu	4 w	1 h	-	-	3695.358	Cu I	6	-	-	-	3692.768	Nd	12	8	-	-
3697.930	U	6	8	-	-	3695.335	V I	125	70 h	-	-	3692.763	Sm	20	6	-	-
3697.90	Dy	3	-	-	Ed	3695.292	Th	5	1	-	-	3692.750	U	10	-	-	-
3697.861	Ru	4	3	-	-	3695.244	W	5	4	-	-	3692.725	W	7	3	-	-
3697.846	Cb	50	50	-	-	3695.237	Ce	2	-	-	-	3692.694	Ir	15	4	-	-
3697.823	W	-	4	-	-	3695.206	U	8	-	-	-	3692.66	Eu	5 w	-	-	-
3697.764	Ru I	8	6	-	-	3695.2	La	2 h	2	-	Me	3692.652	Er	20	12	-	-
3697.739	Gd	200 w	200 w	-	-	3695.158	V	-	3	-	Me	3692.652	Fe	5	1	-	-
3697.72	Tb	8	3	-	Ed	3695.091	Er	2	-	-	-	3692.65	Ho	10	15	-	Ex
3697.704	Re	150 w	-	-	-	3695.054	Fe	200	150	-	S	3692.645	Mo	3	150	-	-
3697.698	Ir I	3	-	-	Ab	3694.974	Cr	-	6 h	-	-	3692.635	Zr II	2	1	-	-
3697.660	Ce	10	1	-	-	3694.953	Rh I	3	2	-	-	3692.571	Th	10	2	-	-
3697.58	Tm	8	3	-	Me	3694.946	W	2	-	-	-	3692.552	Ce	2	-	-	-
3697.551	U	4	6	-	-	3694.945	Mo	40	30	-	-	3692.529	Yt I	7	7	-	-
3697.536	Nd	20	10	-	-	3694.911	Ce I, II	15 s	2	-	-	3692.44	O I	-	[50]	-	Ps
3697.536	Fe	4	-	-	-	3694.894	Th	5	1	-	-	3692.370	Ru	6	-	-	-
3697.50	Cd	-	2	-	Tk	3694.817	Sm	15	3	-	-	3692.357	Rh I	500 hd	150 wd	-	-
3697.46	W	10	9	-	-	3694.816	U	-	3 wh	-	-	3692.31	La II	-	2	-	Me
3697.458	Zr II	20	20	-	-	3694.811	Er	15	6	-	-	3692.310	U	-	2	-	-
3697.432	Fe I	100	60	-	-	3694.81	Ho	-	4	-	Ex	3692.293	Pr	4	1	-	-
3697.392	Cb	10	20	-	-	3694.795	Cb	-	5	-	-	3692.264	I II	-	[5]	-	Ke
3697.293	Ce	2	-	-	-	3694.792	Nd	30	20	-	-	3692.225	V I	200 R	150 R	-	-
3697.25	Dy	10	4	-	Ed	3694.76	Tm	20	20	-	Me	3692.222	Ce	3	-	-	-
3697.165	Nd	20	10	-	-	3694.75	Dy	20	30	-	m	3692.221	Sm II	90	40	-	-
3697.15	H I	-	-	[3]	Rk	3694.75	Tb	50	8	-	Ed	3692.22	Eu	4 wh	-	-	-
3697.131	U	10	3 h	-	-	3694.695	Pr	40	4 h	-	-	3692.20	Ir	2	5	-	-
3697.09	Ne II	-	-	[4]	Bn	3694.666	Cb	10	10	-	-	3692.183	Cb	-	5	-	-
3697.034	Mo	1	25	-	-	3694.622	V I	60	5	-	-	3692.134	Ti	12	1	-	-
3697.034	Th	6	5	-	-	3694.62	Ag	2 h	1 h	-	-	3692.126	Re	15	-	-	-
3696.922	Er	12	1	-	-	3694.519	Ta	7 h	18	-	-	3692.081	Mo	5	3	-	-
3696.913	Ni I	3	-	-	-	3694.508	W	10	20 l	-	-	3692.080	Th	8	4	-	-
3696.9	bh Ca	4	-	-	L	3694.454	Ir	2	-	-	Ab	3692.052	U	4	4	-	-
3696.885	Ti I	20	3	-	-	3694.447	Ti I	80	20	-	-	3692.02	Tb	15	8	-	Ed
3696.87	Dy	10 h	2	-	m	3694.421	Mo	-	20	-	-	3691.98	Eu	3 W	1	-	-
3696.85	Tb	30	8	-	Ed	3694.36	Dy	6	4	-	Ed	3691.917	U	6	8	-	-
3696.824	U	1	3	-	-	3694.355	Th	5	1	-	-	3691.881	Th	8	2	-	-
3696.82	Xe I	-	-	[4]	Me	3694.325	U	6	1	-	-	3691.88	W	4 d	20 d	-	-
3696.818	W	5	3	-	-	3694.321	Pr	3	1	-	-	3691.879	Ta	-	15	-	-
3696.765	Gd	10	15	-	-	3694.314	Sm	15	8	-	-	3691.693	Yb	10	-	-	-
3696.690	U	1	2	-	-	3694.27	La II	4	10	-	Me	3691.617	Th	6	1	-	-
3696.677	Cb	2	50	-	-	3694.24	Ho	10	20	-	Ex	3691.574	Sm	25 w	3	-	-
3696.672	Ce II	3	-	-	-	3694.203	Yb	500 R	1000 R	-	-	3691.551	W II	5	9	-	-
3696.658	Pr	9	2	-	-	3694.20	Yt	4	-	-	-	3691.55	Eu	20 d	-	-	-
3696.653	Th	6	5	-	-	3694.197	Ne II	-	-	[250]	-	3691.55	H I	-	-	[2]	Rk
3696.62	Yt II	6	20 h	m	-	3694.193	Er	25 d	15	-	-	3691.500	Re I	100 w	-	-	-
3696.587	Ru I	50	15	-	-	3694.173	Ce	4 w	-	-	-	3691.484	Pr	9	3	-	-
3696.568	Mn	100	50	-	-	3694.12	Tb	8	-	-	Ed	3691.470	U	3	3	-	-
3696.51	Hf	8	2	-	-	3694.115	Mn	5	5	-	-	3691.45	Ho	6	4	-	Ex
3696.485	Ca I	-	-	[20]	Ms	3694.029	In II	-	-	[40]	-	3691.415	Th	5	1	-	-
3696.44	Eu	12 d	1	-	-	3694.011	Gd	25	25	-	-	3691.381	Re	12	-	-	-
3696.44	Eu	12 d	1	-	-	3694.010	Fe I	400	300	-	-	3691.335	Fe	2	-	-	-
3696.39	Ti II	3	12	-	-	3693.996	Sm II	100	150	-	-	3691.333	Rh I	4	2	-	-
3696.352	U	6	-	-	-	3693.94	Th	2	3	-	-	3691.26	Ho	6	-	-	Ex
3696.349	Sm	1	3	-	-	3693.932	Ni I	50	-	-	-	3691.183	Cb	5	15	-	-
3696.30	Tb	15	8	-	Ed	3693.899	In II	-	-	[35]	-	3691.16	Dy	3	1	-	m
3696.282	I	-	-	[3]	Ke	3693.84	Dy	4	1	-	Ed	3691.152	Fe	4	-	-	-
3696.255	Er	18	2	-	-	3693.82	Eu	25 w	1	-	-	3691.15	Tb	50	50	-	Ed
3696.25	S	-	-	[5]	Hn	3693.788	In II	-	-	[25]	-	3690.935	Ce	3 w	-	-	-
3696.195	W	3	5	-	-	3693.765	Cb	1	2	-	-	3690.931	Sm II	15	2	-	-
3696.158	Ir	20	2	-	-	3693.708	Ce I, II	8	-	-	-	3690.896	A I	-	-	[300]	IHu
3696.11	La II	-	2	-	Me	3693.705	U	4	18	-	-	3690.84	Ca	2	3	-	Ad
3696.08	Dy	2 h	-	-	Ed	3693.698	Th	6	4	-	-	3690.817	U	2	1	-	-
3696.045	Mo	5	8	-	-	3693.667	Mn	50	60	-	-	3690.730	Fe	80	60	-	-
3696.027	Fe I	1	-	-	-	3693.591	Ru	20	5	-	-	3690.724	Os	15	20	-	-
3695.980	Th	8	8	-	-	3693.56	Tb	30	-	-	Ed	3690.723	Co I	60	10	-	-
3695.963	Ce	6	1	-	-	3693.493	Pr	2	1	-	-	3690.704	Rh I	125	50	-	-
3695.898	Cb	4	200	-	-	3693.49	Xe I	-	-	[40]	Me	3690.653	Sm	3 d	-	-	Kn
3695.865	V I	150	100 r	-	-	3693.478	Co I	35	10	-	-	3690.65	Kr II	-	-	[30]	Ma
3695.858	Cr	12	3	-	-	3693.422	Ce	10	1	-	-	3690.65	Ho	-	4	-	Ex
3695.856	Ce	2	-	-	-	3693.375	Mo	5	3	-	-	3690.626	Th	5	1	-	-
3695.84	Eu	5 w	1	-	-	3693.368	Cb	8	10	-	-	3690.593	Mo	10	5	-	-

3690.5—3683.4 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3690.577	Yb	10	50	-	3688.3	Rn	-	[40]	Wo	3685.74	Dy	6	6	Ed
3690.57	Dy	3	1 h	m	3688.282	Cd II	-	2	-	3685.736	Ne I	-	[75]	IHu
3690.543	Nd	8	4	-	3688.213	I	-	[125]	Ke	3685.688	Pr	7	2	-
3690.53	I	-	[5]	Bl	3688.182	Cb	5	20	-	3685.67	Eu	3 w	1	-
3690.490	Th	10	10	-	3688.168	Ir I	10	-	Ab	3685.626	Zr	5	-	-
3690.459	Fe	15	6	-	3688.15	Tb	30	15	Ed	3685.597	W	7	4	-
3690.450	Pr	15	2	-	3688.126	Sm	4 h	-	-	3685.566	Mn	12	12	-
3690.44	Tb	8	-	Ed	3688.069	V I	200	200 R	-	3685.548	Cr I	4	3	-
3690.384	Re	8	-	-	3688.069	W	12	7	-	3685.522	Ce II	6	-	-
3690.359	Mo	-	25	-	3688.050	Nd	15	6	-	3685.398	Ce	2	-	-
3690.342	Zr I	5	-	-	3687.988	Th	5	1	-	3685.318	Ir	2	-	-
3690.341	Pd I	300 h	1000 w	-	3687.971	Cb	20 w	300 w	-	3685.30	Rn I	-	[8]	Ra
3690.31	Rn I	-	[8]	Ra	3687.962	Mo	5	3	-	3685.265	Pr	60	8	-
3690.281	V I	200	125	-	3687.92	U	4	6	-	3685.255	Cr	3 h	1 h	-
3690.259	W	9	8	-	3687.88	N	-	[5]	Du	3685.234	Ce	3	1	-
3690.239	U	2	6	-	3687.876	Sm	50	2	-	3685.212	Mn	15	-	-
3690.122	Ce	8	-	-	3687.802	Ce I, II	10	-	-	3685.195	Ti II	150	700 R	-
3690.119	Th	10	10	-	3687.79	Eu	40 w	50 w	-	3685.17	Er	6 w	-	-
3690.118	Mo	4	1	-	3687.760	U	-	5	-	3685.16	Ho	6	15	Ex
3690.086	Nd	8	-	-	3687.759	Gd	200 w	200	-	3685.128	Cb	10 W	2 W	Me
3690.082	Sm	10	-	-	3687.758	Er	10	3	-	3685.068	Ru	8	3	-
3690.029	Ru	5	100	-	3687.664	Th	5	5	-	3685.019	W	9	7	-
3689.985	Pr	9	3	-	3687.662	Pr	3	-	-	3685.005	Ce	2	-	-
3689.968	U	2	3	-	3687.662	Fe I	15	15	-	3684.993	Cr	2	2 h	-
3689.911	Ti I	100	40	-	3687.545	Cr I	12 h	5	-	3684.97	Ta	3	-	Ks
3689.897	Fe	5	1	-	3687.526	Cr	4	1	-	3684.958	Co I	8	-	m
3689.877	W	40	8	-	3687.473	V I	20	15	-	3684.930	Cb	1	5	-
3689.729	Ta	35	2	-	3687.461	U	-	3	-	3684.930	Co I	7	3	-
3689.72	Tb	8	3	Ed	3687.458	Fe I	400	300	S	3684.924	Pr	8	1	-
3689.714	Pr	20	10	-	3687.455	Ce	2 h	-	-	3684.917	Th	2	-	-
3689.692	Nd	25	15	-	3687.445	Cb	5	3	-	3684.91	Hg	-	[18]	Ps
3689.691	Ir	2	-	Ab	3687.44	Tb	3	8	Ed	3684.909	Nd	10	10	-
3689.685	Ce	8	-	-	3687.426	Pt I	35	3	-	3684.903	Yt II	5	8	-
3689.672	U	1	6	-	3687.354	Ti I	10	-	-	3684.868	Mn	15	15	-
3689.671	Ti I	5	-	-	3687.294	Nd	20	10	-	3684.861	Er	10 W	1	-
3689.628	Cr	8	5	-	3687.252	Cr I	6 h	4 l	-	3684.83	Dy	3 h	2 h	m
3689.61	W	-	10	-	3687.200	Pr	50 d	15 d	-	3684.81	Tb	15	8	Ed
3689.602	Sm	4	-	-	3687.15	Tb	15	3	Ed	3684.776	Sm	2	-	Kn
3689.522	Re I	100 W	-	-	3687.13	S	-	[15]	Ms	3684.759	Pr	4	1	-
3689.494	Ce	5	-	-	3687.101	Fe I	15	7	-	3684.740	Cr	2	-	-
3689.463	Fe I	200	150	-	3687.100	Sm	5	6	-	3684.672	Cu I	12	4	-
3689.42	U	10 w	-	-	3687.100	Er	10	-	-	3684.659	W	10	9	-
3689.404	Cb	2	5	-	3687.080	Ir I	40	4	-	3684.64	Nd	8	1	-
3689.399	Pr	40	10	-	3687.039	Pr	60 d	20 d	-	3684.64	Br	-	[2]	Bl
3689.309	Pb I, II	-	40	-	3686.987	Th	4	4	-	3684.617	U	5	5	-
3689.307	Ir I	7	10	-	3686.970	Ce	2	-	-	3684.546	Os	15	8	-
3689.305	Ni I	2	-	-	3686.964	Mo	4	3	-	3684.539	Sm	6	6	-
3689.302	Cr	6	3	-	3686.86	Sb	-	4 wh	-	3684.521	Mn	5	5	-
3689.204	U	10	1	-	3686.82	Ta	20 w	1 h	Ks	3684.479	Co I	200 W	-	-
3689.201	Pb	-	5	-	3686.803	Cr I	20 h	5 h	-	3684.332	V I	40	10	-
3689.166	Nd	6	4	-	3686.742	U	1	4 h	-	3684.327	Ir I	6	5	-
3689.161	Ce I, II	8	-	-	3686.706	V	5	2	-	3684.327	Mo	5	1	-
3689.12	Er	2	-	-	3686.65	Ca	-	5	-	3684.32	Lu	15	1	Me
3689.12	Tb	15	8	Ed	3686.65	Ho	6	6 h	Ex	3684.31	Ta	2	-	Ks
3689.058	W	7	6	-	3686.601	Ru	5	1	-	3684.293	Nd	10	6	-
3689.058	Os	200	30	-	3686.596	Ce	3	-	-	3684.285	U	-	2	-
3689.038	Cb	5	5	-	3686.575	Mo	5	4	-	3684.284	Er	15	3	-
3689.037	U	5	8	-	3686.557	Cb	5	5	-	3684.252	Cb	1	5	-
3689.0	Pb II	-	[2]	Ea	3686.555	Cu II	-	25	Sh	3684.247	Cr	-	3	-
3688.973	Mo	20	5	-	3686.547	I	-	[70]	Ke	3684.243	Ce	6	-	-
3688.935	Ir I	2	-	m	3686.484	Co I	8	-	m	3684.22	Mo	1	25 d	-
3688.90	Dy	3	-	Ed	3686.478	Pr	25	6	-	3684.131	Nd	3	-	Kn
3688.894	Re	10	-	-	3686.463	U	2	6	-	3684.124	Gd	200 W	150	-
3688.877	Sm	7	7	-	3686.458	Re	8	-	-	3684.120	Sm II	20	5	-
3688.810	Ru	4	-	-	3686.41	W	-	6	-	3684.112	Fe I	300	200	-
3688.785	U	-	2	-	3686.340	Gd	150 W	200	-	3684.1	Li II	-	[2]	Wr
3688.763	Th	12	12	-	3686.263	Ce	5	-	-	3684.014	Er	6	-	-
3688.697	Cb	5	5	-	3686.262	V I	100	100	-	3683.973	Cb	2 h	3 h	Me
3688.659	Ce	10	1	-	3686.258	Fe	10	4	-	3683.944	Th	3	3	-
3688.648	Re	10	-	-	3686.21	Se II	-	[35]	Bl	3683.941	W	10	9	-
3688.476	Fe	40	8	-	3686.185	Ta	35	2	-	3683.85	Eu	8 W	1 h	-
3688.468	Zr I	5	-	-	3686.16	Tm	5	5	Mo	3683.846	Pr	4	2	-
3688.467	Ba I	12	-	-	3686.16	Pa II	-	[10]	Rs	3683.64	I I	-	[2]	Bl
3688.457	Cr	18	6	-	3686.15	Kr II	-	[80 whl]	Me	3683.616	W	-	6	-
3688.44	Cl II	-	[15]	Ks	3686.114	Mo	5	5	-	3683.616	Fe I	3	1	-
3688.44	Eu II	1000 W	500 W	-	3686.036	Ce	8	-	-	3683.592	Ru	3	-	-
3688.422	W	7	5	-	3686.003	Fe I	150	125	-	3683.59	U	2 d	8 d	-
3688.421	Sm II	20	8	-	3685.955	Ti I	40	-	-	3683.58	As	-	15	Ro
3688.420	Ce	2	-	-	3685.951	Ru I	10	5	-	3683.523	Ir	5	-	-
3688.415	Ni I	150	15	-	3685.906	Ta	3	-	-	3683.520	In	-	15	-
3688.390	U	3	10	-	3685.90	Xe I	-	[40]	Me	3683.481	Sb	3	2	-
3688.331	W II	-	6	-	3685.871	Th	4	3	-	3683.474	Mn	12	-	-
3688.331	Nd	10	8	-	3685.804	Nd	30	20	Kn	3683.472	Er	25	-	-
3688.32	Dy	6	3	m	3685.773	Mo	3	2	-	3683.471	Zn II	20	[15]	-
3688.307	Mo	4	150	-	3685.772	U	15	1	-	3683.471	Pb I	300	50	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3683.470	Zr I	2	—	—	—	3680.675	Fe	3	—	—	—	3678.223	Ce	8	—	—	—
3683.453	Ag	4	2	—	—	3680.66	Br	—	—	[6]	—	3678.19	W	1	—	—	—
3683.393	Ce	2	—	—	—	3680.633	Ce	3	—	—	—	3678.189	Nd	10	12	—	—
3683.392	W	8	7	—	—	3680.602	Mo	20	20	—	—	3678.167	Sm	15 d	—	—	—
3683.332	Th	5	4	—	—	3680.574	Th	2	1	—	—	3678.13	S	—	—	[10]	Hn
3683.316	Ag	—	10	—	—	3680.509	U	1	3	—	—	3678.12	Eu	8 w	2	—	—
3683.310	W	8	7	—	—	3680.454	Ca	—	—	[4]	Sv	3678.086	Hf II	—	—	5 h	—
3683.27	Eu	18 w	1 h	—	—	3680.454	Th	3	1	—	—	3678.081	Sm	15	2	—	—
3683.26	Tb	15	—	—	Ed	3680.425	Ce	4	—	—	—	3678.078	Cb	1	10	—	—
3683.20	Tm	10	20	—	Me	3680.385	Fe	2	—	—	—	3678.069	U	2	2	—	—
3683.196	Pr	3	1	—	—	3680.374	Zr I	9	2	—	—	3678.059	Ru	4	2	—	—
3683.126	V I	100	60	—	—	3680.37	Kr II	—	—	[100 whl]	Me	3678.035	Th	10	10	—	—
3683.058	Fe I	200	100	—	—	3680.270	Ti	—	—	6 h	—	3678.016	Os	10	10	—	—
3683.058	Ta	18	1	—	—	3680.235	U	1	3	—	—	3678.00	Dy	3	1	m	—
3683.050	Co I	200 R	—	—	—	3680.216	Re	15	—	—	—	3677.982	Ru	5	1	—	—
3682.983	Pt I	8	2	—	—	3680.209	Mo	3	5	—	—	3677.980	Tm	30	20	Me	—
3682.953	Cb	—	10 h	—	—	3680.148	Mn	5	5	—	—	3677.927	Ce	2	—	—	—
3682.86	Au	20	10 h	—	—	3680.113	V I	125	50 h	—	—	3677.89	Tb	70	8	Ed	—
3682.742	Gd	10	20	—	—	3680.101	Cs	—	—	[4]	Sv	3677.888	Cr II	3 l	70	—	—
3682.707	Er	18	4	—	—	3680.10	Er	6	—	—	—	3677.859	Ce	2	—	—	—
3682.651	Zr II	1	2 h	—	—	3680.079	Ce II	10	2	—	—	3677.85	Mo	—	5	—	—
3682.65	Ho	6	4	Ex	—	3680.063	Ru	4	—	—	—	3677.8	bh B	50	—	L	—
3682.647	Ce II	8	1	—	—	3680.06	A II	—	—	[10]	Rt	3677.778	Cb	5	5 h	—	—
3682.56	A II	—	[5]	Rt	—	3680.008	Hg I	—	—	[40]	St	3677.775	Sm	25	10	—	—
3682.541	Sm	8 d	—	—	—	3679.997	Sm II	20	4	—	Kn	3677.770	Ti I	8	1	—	—
3682.52	Dy	5 h	2 wh	Ed	—	3679.985	Pr	5	2	—	—	3677.741	Th	5	4	—	—
3682.490	Th	4	1	—	—	3679.915	Fe I	500	300	S	—	3677.720	Pr	10	2	—	—
3682.47	Ag I	50	4	Bx	—	3679.879	Ce II	2	—	—	—	3677.700	Mo	6	6	—	—
3682.459	U	8	—	—	—	3679.819	Cr	40	8	—	—	3677.678	Cr II	6	35	—	—
3682.44	Eu	12	1	—	—	3679.806	U	—	5	—	—	3677.630	Fe	80	60	S	—
3682.428	Cu II	—	4	Sh	—	3679.80	Ne II	—	—	[4]	Bn	3677.62	Ho	6	6	Ex	—
3682.4	bh Zr	30	—	L	—	3679.712	Th	12	12	—	—	3677.56	Sr	—	3	Sd	—
3682.359	Th	4	4	—	—	3679.711	Ir	2	—	—	Ab	3677.54	Xe I	—	—	[2]	Me
3682.26	Tb	50	30	Ed	—	3679.70	Ho	6	4 h	Ex	—	3677.477	Fe I	2	1	—	—
3682.243	Ne I	—	[75]	IHu	—	3679.673	Ti	5	12	—	—	3677.41	W	—	10	—	—
3682.236	Hf	25	30	—	—	3679.67	F II	—	—	[15]	Di	3677.390	U	10	—	—	—
3682.212	Sm II	10	2	—	—	3679.638	Zr II	2	2	—	—	3677.308	Fe	40	30	—	—
3682.209	Fe I	400	300	—	—	3679.611	Kr I	—	—	[50]	IHu	3677.26	Dy	3	1	Ed	—
3682.092	W	25	20	—	—	3679.608	Cb	—	—	10 h	—	3677.248	Sm	15	—	Kn	—
3682.087	Mn	25	40	—	—	3679.607	W	12	9	—	—	3677.170	Ce II	8	—	—	—
3682.077	Ce	10 s	2	—	—	3679.561	Kr I	—	—	[50]	IHu	3677.089	Ir	3	—	Ab	—
3682.075	Sm	5	3	—	—	3679.56	Tb	15	—	—	Ed	3677.085	V I	25	70	—	—
3682.05	Cl	—	[6]	Bl	—	3679.49	Eu	15	1	—	—	3677.080	Cb	5	8	—	—
3682.037	U	6	15	—	—	3679.424	Ce	12	4	—	—	3676.984	Ce	3	—	—	—
3682.03	Ca	2	4	Ad	—	3679.404	Nd	4 h	2 h	—	Kn	3676.959	Mn	60	100	—	—
3681.950	Mo	4	1	—	—	3679.375	U	2	—	—	—	3676.955	Ru	8	3	—	—
3681.93	Dy	2	1	Ed	—	3679.31	Xe I	—	—	[4]	Me	3676.890	Ta	5	1 h	—	—
3681.886	Th	8	8	—	—	3679.25	Sm	25	1	—	—	3676.879	Fe I	10	2	—	—
3681.873	Nd	6	1	—	—	3679.227	Mo	4	4	—	—	3676.878	Cu	25 wh	1 h	—	—
3681.856	Pr	10	5	—	—	3679.19	Ho	6	4	Ex	—	3676.87	Eu	15	1	—	—
3681.791	Ce	2	—	—	—	3679.157	Ce	6	1	—	—	3676.837	Sm	10	5	—	—
3681.725	Mo	8	25	—	—	3679.140	Th	3	—	—	—	3676.826	Pr	—	2	—	—
3681.719	Sm	30	6	—	—	3679.1	bh B	200	—	—	L	3676.802	W	10	10	—	—
3681.71	Tb	8	—	Ed	—	3679.070	Cr	15	5	—	—	3676.694	Th	6	4	—	—
3681.691	Cr	18	8	—	—	3679.067	Ce	3	—	—	—	3676.684	V I	300	150 h	—	—
3681.683	Cb	1	10	—	—	3679.002	Fe	2	2	—	—	3676.670	Ru	8	4	—	—
3681.651	Fe I	6	2	—	—	3679.0	Rn	—	—	[30]	Pe	3676.656	Ir	15	2	—	—
3681.648	Pr	2	—	—	—	3678.98	Fe I	5	1	—	—	3676.62	Eu	20 W	2	—	—
3681.646	Zr	5	—	—	—	3678.958	Er	12	—	—	—	3676.604	Sc	2	1	—	—
3681.568	Os	30	8	—	—	3678.905	Zr II	6	5	—	—	3676.59	Ho	6	4	Ex	—
3681.553	Mo	4	3	—	—	3678.864	Fe I	100	50	—	—	3676.572	Re	8	—	—	—
3681.54	Eu	3	1 h	—	—	3678.864	Tm	50	40	—	Me	3676.56	Dy	6	30	Ed	—
3681.525	K II	—	[30]	Dm	—	3678.848	Ce	8	—	—	—	3676.560	U	3	15	—	—
3681.39	Hf II	3	4	m	—	3678.791	Th	3	1	—	—	3676.554	Co	100	35	—	—
3681.38	Si	—	3 w	Sy	—	3678.78	Tb	30	3	Ed	—	3676.508	Er	20	2	—	—
3681.376	Ce	10	3	—	—	3678.752	U	6	15	—	—	3676.5	bh Ca	8	—	L	—
3681.311	Re	15	—	—	—	3678.717	Cb	5	3 h	—	—	3676.408	Ru	5	2 h	—	—
3681.303	V I	2	—	—	—	3678.66	Kr	—	—	[7 h]	Me	3676.377	Pb	—	2	—	—
3681.272	Ti I	15	—	—	—	3678.611	I	—	—	[7]	Ke	3676.35	Tb	100	200	Ed	—
3681.243	Ta	15	1	—	—	3678.61	Ho	6	4	Ex	—	3676.335	Cb	—	5	Me	—
3681.227	Fe	6	2	—	—	3678.55	I	—	—	[3]	Bl	3676.322	Cr	40	15	—	—
3681.194	Th	6	5	—	—	3678.543	Sc	3	15	—	—	3676.315	Sm	8	3	—	—
3681.113	Ce	2	1	—	—	3678.541	Pb	—	—	2	—	3676.314	Fe I	200	100	S	—
3681.10	N	—	[10]	Du	—	3678.519	Dy	5	1	m	—	3676.312	Cb	10	20	—	—
3681.08	Ca	2	2 h	Ad	—	3678.466	Th	4	1	—	—	3676.311	W	6	—	—	—
3681.039	Rh I	20	25	—	—	3678.39	Re	6	—	—	—	3676.26	P II	—	—	[100 W]	Gu
3680.964	Sm	25	5	—	—	3678.342	Sc II	4	15	—	—	3676.235	Mo	8	10	—	—
3680.880	U	20	1	—	—	3678.315	Ru	6	15	—	—	3676.156	Ce	12	1	—	—
3680.86	W	4 d	5 d	—	—	3678.302	Pr	6	—	—	—	3676.14	Eu	2 w	—	—	—
3680.857	Cb	2	2	—	—	3678.286	Ir	10	—	—	Ab	3676.06	Hf	—	3	Me	—
3680.848	Ce	6	—	—	—	3678.27	Eu	50	—	—	—	3676.05	K II	—	—	[10]	Bn
3680.798	Fe	12	7	—	—	3678.27	A	—	—	[10]	Rt	3676.030	Zr	2 h	—	—	—
3680.787	Pr	3	1	—	—	3678.255	Ru	5	—	—	—	3676.01	Dy	6	—	m	—
3680.76	Eu	4	3	Kn	—	3678.24	La II	2 h	—	—	2 h	3676.002	Re	20	—	—	—
3680.684	Mo	20	20	—	—	3678.234	Ca I	15	—	—	2 h	3675.981	Mo	10	4	—	—

3675.9—3668.8 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3675.915	Pr	6	2	—	—	3673.558	Rh I	2	—	—	—	3670.891	Os I	200	20	—	—
3675.85	S	—	[4]	—	Bl	3673.542	Nd	20	20	—	Kn	3670.830	Eu	4	—	1 h	—
3675.85	Er	2 W	1	—	—	3673.493	Pr	7	2	—	—	3670.817	Sm II	100	50	—	—
3675.78	Tb	30	8	—	Ed	3673.448	Ca I	5	3	—	Cw	3670.812	Fe I	20	6	—	—
3675.740	Hf	10	6	—	—	3673.41	Rn I	—	[15]	—	Rs	3670.794	Pr	8	2	—	—
3675.730	Fe	2 h	—	—	—	3673.404	V I	150	80 h	—	—	3670.786	W	—	5	—	—
3675.730	Ce	2	—	—	—	3673.265	Ce	3	—	—	—	3670.767	W	7	6	—	—
3675.718	Rb	—	[5]	—	Rr	3673.262	Th	10	10	—	—	3670.68	Yb	2	10	—	—
3675.700	V I	100	70	—	—	3673.26	A	—	[5]	—	Rt	3670.672	Ce II	6	—	—	—
3675.673	Mn	20	—	—	—	3673.228	Cb	5	10	—	—	3670.668	Mo	—	25	—	—
3675.64	Yt II	2	3 h	—	—	3673.216	Mo	4	4	—	—	3670.657	Sm	10	5	—	—
3675.571	Th	10	10	—	—	3673.196	Eu	20	2	—	—	3670.64	A I	—	[300]	—	Ms
3675.555	W	12	10	—	—	3673.152	Dy	25	5	—	—	3670.635	Th	5	1	—	—
3675.524	Ce	5	—	—	—	3673.143	Ir	10	—	—	—	3670.55	Tb	15	3	—	Ed
3675.519	U	—	3 h	—	—	3673.142	Er	12	1	—	—	3670.530	U	6	—	—	—
3675.518	Pr	4	—	—	—	3673.14	Tm	10	15	—	Me	3670.522	Re I	20	—	—	—
3675.497	V I	40	10	—	—	3673.087	Fe	10	4	—	—	3670.517	Mn	25	15	—	—
3675.49	Ta	18	—	—	Ks	3673.059	U	6	—	—	—	3670.51	Nd	10	4	—	—
3675.451	Os	40	15	—	—	3673.02	Hg	—	[5]	—	Wd	3670.503	Sm II	10	3	—	—
3675.439	Sm	—	3	—	—	3672.95	W	4 d	2 h	—	—	3670.49	Si	—	4	—	Sy
3675.365	Ce	8	1	—	—	3672.820	Mo	20	20	—	—	3670.490	Ce	10	1	—	—
3675.355	Mo	25 r	25	—	—	3672.789	Ce	15	5	—	—	3670.427	Ni I	150	20	—	—
3675.307	Ca I	10 h	2	—	Cw	3672.712	Fe I	4	2	—	—	3670.4	Li I	5	—	—	Fl
3675.305	Cb	3	5	—	—	3672.67	Dy	10	4	—	m	3670.361	Re	15	—	—	—
3675.268	Ba	2	—	—	Sz	3672.665	Zr II	5	—	—	—	3670.29	Cl	—	[8]	—	Bl
3675.265	Sc II	5	2	—	—	3672.616	Pr	7	1	—	—	3670.29	Ho	6	6	—	Ex
3675.262	Ru I	6	3	—	—	3672.586	W	1	18	—	—	3670.265	U	3	2	—	—
3675.255	U	8	—	—	—	3672.579	U	8	15	—	—	3670.263	Pr	8	3	—	—
3675.22	A I	—	[300]	—	Ms	3672.576	Cb	3	3	—	—	3670.23	La II	2	3	—	Me
3675.172	Cb	3	1	—	—	3672.57	Xe II	—	[10]	—	Hu	3670.21	Ca	2	4	—	—
3675.143	Th	5	1	—	—	3672.534	Th	2 d	1 d	—	—	3670.072	U	15	18	—	—
3675.125	Ta	3	1	—	—	3672.441	Cb	5	5	—	—	3670.072	Ce	2 w	—	—	—
3675.115	Sm	2	—	—	Kn	3672.403	V I	100	40 h	—	—	3670.071	Fe	200	200	—	—
3675.093	Yb	50	200	—	—	3672.400	Re I	20	—	—	—	3670.062	Th	3 d	4 d	—	—
3675.085	U	4	6	—	—	3672.383	Ru I	6	4	—	—	3670.058	Co I	20	—	—	—
3675.03	Tb	8	3	—	Ed	3672.363	Nd	30	12	—	Kn	3670.053	Cb	1	15	—	—
3674.994	Ce	3	—	—	—	3672.312	Dy	100	100	—	Ed	3670.028	Fe I	100	—	—	—
3674.989	U	2	6	—	—	3672.304	Th	4	1	—	—	3670.025	Re I	15	—	—	—
3674.984	Ir I	100	50	—	—	3672.303	Er	18	2	—	—	3670.022	Nd	4	2	—	—
3674.97	W	—	8	—	—	3672.30	Tb	8	3	—	Ed	3669.962	Ce	3	—	—	—
3674.95	Pb	—	2	—	Sx	3672.30	Ho	6	2	—	Ex	3669.958	Th	5 d	1 d	—	—
3674.90	Au	4	5	—	—	3672.269	Hf	25	3	—	—	3669.92	W	—	7	—	—
3674.893	Th	5	1	—	—	3672.257	Ce	2	—	—	—	3669.91	Xe I	—	[10]	—	Me
3674.883	Pr	5	2	—	—	3672.213	Sm	6	5	—	—	3669.886	Sm II	8	2	—	—
3674.827	Ta	20	3 h	—	—	3672.21	Eu	7 w	—	—	—	3669.838	Mn	30	30	—	—
3674.778	Cb	20	5	—	—	3672.187	U	5	—	—	—	3669.817	Pr	9	2	—	—
3674.77	Ho	8	15	—	Ex	3672.180	W	5	4	—	—	3669.81	Eu	8 W	1 wh	—	—
3674.768	Fe	40	25	—	—	3672.166	Ce I	10	1	—	—	3669.774	Re I	25	—	—	—
3674.765	Rh I	10	4	—	—	3672.14	S II	—	[20]	—	Hn	3669.757	Fe	2	—	—	—
3674.76	Ti	2	2	—	—	3672.066	Ru	4	1	—	—	3669.737	Cb	5	8	—	—
3674.718	Zr II	100	40	—	—	3672.016	La I	25	3	—	—	3669.719	Ce	2	—	—	—
3674.685	V	2	20	—	—	3671.994	Pt I	80	10	—	—	3669.710	Yb	50	80	—	—
3674.678	Cb	20	4	—	—	3671.953	Cu I	20	3	—	—	3669.7	Rn	—	[5]	—	Pe
3674.67	Eu	25	—	—	—	3671.937	Ce II	10	1	—	—	3669.62	A	—	[10]	—	Rt
3674.648	Ce	2	—	—	—	3671.92	As II	—	15	—	Ro	3669.62	Tb	30	—	—	Ed
3674.645	Nd	15	6	—	—	3671.915	Pr	20	5	—	—	3669.523	Fe I	200	150	—	S
3674.580	W	10	12	—	—	3671.82	Ag	—	7 h	—	Fn	3669.523	Pr	9	3	—	—
3674.473	Ce	4	—	—	—	3671.734	Cb	2	5	—	—	3669.52	Ho	6	4	—	Ex
3674.454	Dy	7	1	—	—	3671.700	Fe	3	1	—	—	3669.494	Ru	50	70	—	—
3674.415	Fe	12	5	—	—	3671.697	Dy	6	1 h	—	—	3669.433	Re	15	—	—	—
3674.36	Ho	6	2	—	Ex	3671.673	Ti I	150	70	—	—	3669.413	Th	4	4	—	—
3674.335	Sm	2	—	—	—	3671.660	Nd	10	6	—	—	3669.408	V	20 W	300	—	Me
3674.18	Eu	15 w	—	—	Kn	3671.65	Mo	5	3	—	—	3669.399	Mn	3	3	—	—
3674.16	W	4 d	5 d	—	—	3671.65	Ho	6	4	—	Ex	3669.39	Dy	2	—	—	Ex
3674.15	Ni I	200	50 r	—	—	3671.563	Pr	8	2	—	—	3669.36	U	—	3	—	—
3674.150	Ce	6	1	—	—	3671.543	Th	6	4	—	—	3669.346	Cb	2	3 h	—	—
3674.140	Pr	9	2	—	—	3671.539	U	4	1	—	—	3669.344	Mo	8	8	—	—
3674.130	U	8	—	—	—	3671.525	Fe I	2	—	—	—	3669.328	W	4	6	—	—
3674.093	Dy	100	50	—	—	3671.515	Ce	2	—	—	—	3669.313	Ce	3	—	—	—
3674.087	Er	20	2	—	—	3671.503	Pb	50	7	—	—	3669.27	La	—	3 h	—	Me
3674.071	Th	3 d	1 d	—	—	3671.5	bh Sr	4	—	—	L	3669.241	Ni I	150	10	—	—
3674.063	Gd	100 W	30	—	—	3671.449	Nd	10	6	—	—	3669.21	Tb	8	3	—	Ed
3674.055	Nd	30	10	—	—	3671.42	Pb	3	3	—	Ed	3669.157	Fe I	50	30	—	—
3674.053	Sm II	50	10	—	—	3671.39	Tb	—	70	—	Sx	3669.13	Eu	7 w	1 h	—	—
3674.05	Tb	15	3	—	Ed	3671.370	Pr	8	2	—	—	3669.084	Ce	2	1	—	—
3674.047	Ce	5	—	—	—	3671.368	Cb	3	5	—	—	3669.05	Ho	6	6	—	Ex
3674.045	Pt I	80	4	—	—	3671.316	Ce	5	1	—	—	3669.049	S II	—	[60]	—	Hn
3674.043	Fe	7	1	—	—	3671.306	Er	12	1	—	—	3669.023	Er	4	—	—	—
3673.90	Fe	6	2	—	—	3671.269	Zr II	40	30	—	—	3669.01	Kr	—	[150 hl]	—	Me
3673.871	Mo	3	4	—	—	3671.219	Ru I	10	4	—	—	3669.007	Cb	10	10	—	—
3673.83	Cl II	—	[18]	—	Ks	3671.216	Gd	150 w	100	—	—	3668.966	Ti I	100	40	—	—
3673.799	Th	10	10	—	—	3671.205	V I	100	70	—	—	3668.911	Dy	6	3	—	—
3673.747	Ce	5	—	—	—	3671.042	Zr	3	—	—	—	3668.893	Fe	5	1	—	—
3673.73	Tb	8	3	—	Ed	3671.01	A II	—	[3]	—	Rt	3668.887	Sm	2	—	—	—
3673.638	Ce	10 s	1	—	—	3670.915	Nd	4	—	—	—	3668.830	Pr	100	40	—	—

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3668.789	Nd	25	4	—	3666.348	Ce II	5	—	—	3663.859	Rb II	—	[15]	Rr
3668.737	Kr I	—	[10]	I	3666.31	Dy	5	1	Ed	3663.845	Ta	15	—	—
3668.732	Er	1	4 wh	—	3666.309	Os	40	15	—	3663.825	W	7	6	—
3668.729	Ru	4	2	—	3666.265	Sm	6	3	Kn	3663.76	A I	—	[5]	Ms
3668.719	Ce II	12 s	2	—	3666.249	Fe I	20	7	—	3663.751	Cb	—	8 h	Me
3668.665	W	10	12	—	3666.215	Rh I	70	30	—	3663.708	Th	10	10	—
3668.627	K II	—	[10]	Dm	3666.210	U	6	8	—	3663.701	Ce	10 s	1	—
3668.622	Cb	5	5	—	3666.171	Cr I	12	2	—	3663.659	Mo	4	4	—
3668.59	Kr II	—	[6]	Me	3666.101	U	1	6	—	3663.654	Sm	3	4	—
3668.59	P	—	[50]	Gu	3666.10	Ta	20	—	Ks	3663.651	Zr I	100	10	—
3668.51	Eu	2 w	2 w	—	3666.024	Ce	15	—	—	3663.594	V I	150	1 wh	—
3668.50	Dy	3	1	Ed	3666.01	Kr II	—	[5]	Me	3663.458	Fe I	25	7	—
3668.50	Tb	15	3	Ed	3665.986	Ir	2	—	—	3663.44	Eu	4 w	—	—
3668.491	Er	25	3	—	3665.980	Cr	20	15	—	3663.44	Kr II	—	[20]	Me
3668.489	Yt II	7	20	—	3665.924	Ni	3	—	—	3663.439	Cb	3	3	—
3668.488	Mo	5	5	—	3665.881	W	9	8 s	—	3663.373	Ru	5	60	—
3668.477	Pr	3	—	—	3665.878	Eu	2 w	—	—	3663.361	W	8	9	—
3668.447	Zr II	10	9	—	3665.878	Ir	3	—	Ab	3663.348	U	3	1	—
3668.428	U	4	—	—	3665.81	Tm	40	20	Me	3663.30	Mo	8	8	—
3668.31	Gd	5	10	—	3665.795	Yt I	3	2	—	3663.276	Hg I	500	400	Cn
3668.216	Ni I	3	4	—	3665.751	Nd	10	4	—	3663.267	Fe	8	3	—
3668.214	Fe I	15	4	—	3665.747	Mo	15	15	—	3663.206	Cr I	35	20	—
3668.207	Hf	10	1	—	3665.735	Cu I	20	5	—	3663.204	Th	4	5	—
3668.184	Ir	8	—	—	3665.731	Th	6	5	—	3663.178	Cb	5	3 h	—
3668.170	Sm	2 d	—	Kn	3665.60	Tb	30	3	Ed	3663.151	W	7	6	—
3668.147	Th	8	2	—	3665.574	Ce	3	—	—	3663.12	Tb	50	15	Ed
3668.13	Zn	3	3 h	Vs	3665.496	Ce	4	—	—	3663.10	Ta	18 d	—	Ks
3668.08	Tm	80	20	Ma	3665.485	Pb II	—	2	—	3663.095	Pt I	50	2	—
3668.07	Tb	15	3	Ed	3665.484	Th	3	—	—	3663.09	Hg	5 d	3	—
3668.04	Er	6 d	1	—	3665.40	Dy	4	—	m	3663.033	Nd	6	2	—
3668.03	Cl II	—	[20]	Ks	3665.396	U	3	—	—	3663.029	Re	5	—	—
3668.029	Cr I	15	4	—	3665.377	Sm	6	—	Kn	3662.990	Mo	8	10	—
3668.002	Mo	4	3	—	3665.35	Ta	10	—	Ks	3662.990	Ce	8 s	—	—
3667.999	Fe I	60	10	—	3665.346	Hf II	20	25	—	3662.98	Ho	6	4	Ex
3667.981	Ce	80 s	15	—	3665.326	Kr I	—	[80]	I	3662.94	Eu	15 w	5 w	—
3667.975	U	15	8	—	3665.22	La II	4	4	Me	3662.921	Cb	2	2	—
3667.97	Ho	10	6	Ex	3665.21	Er	8	—	—	3662.897	Sm II	25	10	—
3667.93	Ba I	2	—	Sd	3665.207	U	5	1	—	3662.878	Hg I	50	400	Cn
3667.907	Sm II	25	10	—	3665.20	Dy	7	5	Ed	3662.867	Er	10	—	—
3667.757	Cb	3	5	—	3665.185	Th	5	4	—	3662.849	Fe	30	5	—
3667.741	V I	80	25 h	—	3665.180	Nd	25	12	—	3662.840	Cr II	25	8	—
3667.740	U	2	2	—	3665.159	Cb	4 h	5 h	—	3662.784	Rb II	—	[15]	Rr
3667.719	W	10	10	—	3665.15	Eu	4 w	—	—	3662.731	Ce	2	—	—
3667.680	Ta	10	—	—	3665.142	V I	100	50 h	—	3662.693	Sm	25	10	Kn
3667.674	Pr	10	4	—	3665.069	Ir	5	2	Ab	3662.659	U	15 r	2	—
3667.662	Cb	3	10	—	3665.05	Pb I	—	2	Sx	3662.64	Tb	8	—	Ed
3667.60	Ba I	2	—	Sd	3665.050	Ce	8	—	—	3662.528	Ba	10	5 l	m
3667.550	Ce	3	—	—	3664.96	Dy	3	—	Ed	3662.52	Eu	3 w	—	—
3667.541	Sm	10	—	Kn	3664.949	Ce II	8	—	—	3662.487	Ce	8	—	—
3667.45	Cr	—	25	—	3664.942	Cr	1	40	—	3662.457	Pr	3	1	—
3667.35	Tb	15	—	Ed	3664.822	Cb	3	2	Me	3662.382	Cr	6	4 h	—
3667.32	Cd II	—	10	m	3664.813	Mo	20	40	—	3662.343	Ta	15	15	—
3667.277	Ce	4	—	—	3664.81	Rn	—	[25]	Hc	3662.331	U	10	10	—
3667.262	Fe	80	25	—	3664.731	Ce	8	1	—	3662.33	Eu	8	—	Kn
3667.182	W	8	7	—	3664.73	Yb	2	4	—	3662.275	Er	15	1	—
3667.143	Pr	9	2	—	3664.70	U	2 d	2 d	—	3662.27	Ho	20	10	Ex
3667.134	U	8	5	—	3664.695	Cb	30	30	—	3662.268	Gd	200 w	200	—
3667.064	Zr II	3	1	—	3664.694	Fe	12	3	—	3662.265	Ce	2	—	—
3667.056	Ta	1	5	—	3664.649	Nd	20	10	Kn	3662.263	Nd	30	30	Kn
3667.05	Ho	6	10	Ex	3664.64	Tb	50	8	Ed	3662.254	Sm II	50	50	—
3667.001	Cb	8	15	—	3664.640	Pr	10	3	—	3662.25	Tb	8	—	Ed
3666.985	Th	5	2	—	3664.63	Dy	10	6	m	3662.24	Dy	6	—	Ed
3666.951	Sm	10	2 h	—	3664.621	Gd	200 w	200	—	3662.237	Ti II	40	100	—
3666.948	Fe I	3	—	—	3664.618	Ir	60	15	—	3662.194	Th	4	—	—
3666.935	Mo	6	6	—	3664.614	Yt II	100	100	—	3662.161	Co I	100	25	—
3666.911	Rh I	10	4	—	3664.60	Yb	2	2	—	3662.152	Mo	6	8	—
3666.890	Ta	15	—	—	3664.598	Ba	2	—	Sz	3662.144	Zr II	5	5	—
3666.858	U	2	1 h	—	3664.540	Fe I	35	8	—	3662.121	Re	10	—	—
3666.850	Dy	6	3	—	3664.529	U	2	2	—	3662.073	La II	60	40	—
3666.84	Eu	5 w	4 w	—	3664.440	Er	40	20 h	—	3662.050	Cb	5	3	—
3666.813	W	5	4	—	3664.437	Ce	2	—	—	3662.04	Er	9	1	—
3666.781	Fe	3	—	—	3664.305	Mo	5	5	—	3661.951	Ni I	50	6	—
3666.775	Hf II	25	4	—	3664.28	Tb	8	—	Ed	3661.95	S	—	[8]	Bl
3666.774	Rb II	—	[2]	Rr	3664.267	Ir I	3	—	—	3661.911	Ce	6	—	—
3666.715	Mo	8	10	—	3664.255	U	1	6	—	3661.91	Eu	3 w	—	—
3666.65	Ho	6	4	Ex	3664.254	Sc II	4	2	—	3661.90	U	12 r	—	—
3666.642	Cr I	20	15	—	3664.19	P II	—	[100 w]	Gu	3661.863	Rh I	10	5	—
3666.620	U	3	—	—	3664.112	Ne II	—	[250]	Ps	3661.782	Mo	10	10	—
3666.592	Ti II	2	1	—	3664.095	Ni I	300	30	—	3661.773	I II	—	[40 d]	Ke
3666.565	Sm	8	2	—	3664.011	Sm	15	—	Kn	3661.75	Dy	6	4	Ed
3666.565	Nd	10	4	—	3663.965	Mo	3	3	—	3661.732	Ce	10	2	—
3666.55	Hg	9	—	—	3663.954	Fe	4	2	—	3661.73	Hf II	1	2	Me
3666.537	Sc II	15	8	—	3663.934	U	10	—	—	3661.708	Ir I	50	30	—
3666.533	Cb	8	10	—	3663.93	Xe II	—	[3 h]	Hu	3661.70	Xe II	—	[10 whl]	Hu
3666.380	Th	4	2	—	3663.884	Mo	3	3	—	3661.691	Nd	10	4	—

3661.6—3654.4 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3661.688	Ta	20 r	3	—	3659.13	Eu	2 h	2 h	—	3656.755	Ce II	10 s	—	—
3661.687	Sm	6	4	Kn	3659.045	Hf II	3	8	—	3656.706	V I	80	20 h	—
3661.677	Cb	5	5 h	—	3659.038	Pr	10	8	—	3656.696	Th	6	1	—
3661.668	Gd	10	20	—	3659.009	U	2	8	—	3656.684	W	7	5	—
3661.624	Pr	25	5	—	3658.92	Mo	—	20	—	3656.679	Hf II	—	2	—
3661.624	Th	10	5 h	—	3658.88	Tb	100	100	Ed	3656.677	Ir I	5	—	—
3661.601	Rh I	2	—	—	3658.84	Er	10 W	1 W	—	3656.64	Ag	—	8 h	Fn
3661.577	Ru I	1	5	—	3658.811	Th	5	1	—	3656.626	U	8	—	—
3661.525	Th	—	5 h	—	3658.80	Eu	2 w	—	—	3656.6	bh Ca	12	—	L
3661.482	U	5	1 h	—	3658.777	Ta	35	3 l	—	3656.576	Ce	3	—	—
3661.391	Cs	—	[6]	Sv	3658.774	Ce	6	—	—	3656.495	Cb	2	2	—
3661.382	V I	10	150	Mo	3658.74	Re	4	—	—	3656.48	Tb	15	3	Ed
3661.374	Fe I	10	1	—	3658.677	U	6	—	—	3656.46	W	—	7	—
3661.367	U	1	2 h	—	3658.64	Dy	3	1 h	Ed	3656.416	Ir	6	—	—
3661.353	Ru I	60	100	—	3658.598	Cb	5 h	5 h	—	3656.38	Dy	3	—	Ed
3661.350	Sm II	100	50	—	3658.552	Fe I	5	1	—	3656.34	Ta	3	—	Ks
3661.345	Nd	40	25	—	3658.55	Ho	—	4	Ex	3656.319	Al II	—	[2]	Sy
3661.332	Zr II	5	1	—	3658.518	Mn	5	5	—	3656.301	Ce	2	—	—
3661.252	Os	10	10	—	3658.46	Se II	—	[5]	Bl	3656.28	Ca	2	3	—
3661.239	Cr	2	1 h	—	3658.44	Xe II	—	[3 h]	Hu	3656.271	Pr	9	1	—
3661.236	W	3	7 d	—	3658.424	Ce	2	—	—	3656.27	Eu	4	—	Kn
3661.203	Zr I	18	—	—	3658.41	La II	3	—	—	3656.261	Cr I	80	25	—
3661.076	Mo	5	5	—	3658.370	W	6	3	—	3656.245	Sm	6	5	—
3661.06	Dy	3	1	m	3658.347	Pr	7	1	—	3656.227	Fe	15	5	—
3661.046	Hf II	10	25	—	3658.333	Mo	4	25	—	3656.204	Th	10	10	—
3661.030	U	3	1	—	3658.33	Cl II	—	[4]	Mu	3656.193	U	1	2	—
3661.00	Kr II	—	[15]	Me	3658.301	Zr	2	—	—	3656.17	W	8	3	—
3660.974	Nd	10	2	—	3658.264	V I	1	10	Me	3656.163	Gd	200 W	200	—
3660.917	Mo	6	6	—	3658.258	Ce II	10	—	—	3656.05	A	—	[10]	Rt
3660.912	Zr II	4	1	—	3658.22	Tb	15	3	Ed	3656.05	Ta	7	—	Ks
3660.814	Ru	2	8	—	3658.213	Pr	15	2	—	3655.975	Cb	5	10	—
3660.800	Fe	2	—	—	3658.186	Gd	2	—	—	3655.963	Nd	10	4	—
3660.783	Er	10	1	—	3658.173	Th	8	6	—	3655.94	Ta	5	—	Ks
3660.75	Tb	30	—	Ed	3658.168	Cr	—	20	—	3655.90	Dy	3	1	Ed
3660.736	U	1	8	—	3658.161	U	—	2	—	3655.859	Cu I	20	7	—
3660.693	Co	5	2	—	3658.147	Mo	5	5	—	3655.851	Ce I, II	25	12	—
3660.641	Ce	40	10	—	3658.104	Nd	2	—	—	3655.788	Mo	—	25	—
3660.633	Ti I	90	18	—	3658.100	Ti I	150	60	—	3655.778	Sn	30	25 h	—
3660.609	W	8	9	—	3658.089	Ce	5	—	—	3655.760	Sm	5	3	—
3660.60	Eu	30 d	—	—	3658.069	Th	10	10	—	3655.732	Er	5	—	—
3660.528	Re	25	—	—	3658.020	Fe	3	1	—	3655.73	Cs	—	[4]	Bs
3660.44	A II	—	[15]	Rt	3657.991	Nd	4 h	2 h	—	3655.729	Yb	8	—	—
3660.44	Tb	15	3	Ed	3657.987	Rh I	500 W	200 W	—	3655.675	Fe	15	2 h	—
3660.404	Mn	75	75	—	3657.915	Co I	18	5	—	3655.65	Ta	3	—	Ks
3660.397	Ce	2	—	—	3657.904	Fe I	20	4	—	3655.60	Dy	10	2	Ed
3660.375	Pr	40	20	—	3657.902	Mn	12	10	—	3655.558	Zr II	3	3	—
3660.370	W	5	4	—	3657.897	Cb	4	5	—	3655.548	Sm	6	5	—
3660.366	Cb	20	30	—	3657.882	W II	5	15	—	3655.467	Fe I	25	25	—
3660.335	Fe I	5	1	—	3657.821	U	10	—	—	3655.435	U	3 h	5 h	—
3660.171	W	6	3	—	3657.808	Sm	2	3 h	—	3655.359	Ce II	3	—	—
3660.156	Ce	12	4	—	3657.750	Cb	3 d	—	Me	3655.29	A II	—	[15]	Rt
3660.124	Th	4	2	—	3657.74	Xe II	—	[3]	Hu	3655.25	Eu	6 W	—	—
3660.110	U	3	2	—	3657.681	Ce	5	—	—	3655.25	Sm II	1	4	—
3660.075	Pr	10	3	—	3657.625	Pr	10	1	—	3655.185	Sm	7	3	—
3659.975	Cr	2	1	—	3657.616	Ir I	5	2	—	3655.125	Th	3	—	—
3659.972	Ce II	20	5	—	3657.605	Eu	2 w	—	—	3655.118	Pr	9	2	—
3659.948	Nd	15	4	—	3657.592	W II	10	25	—	3655.111	U	8	4	—
3659.93	Ne II	—	[7]	Bn	3657.551	Ru	—	50	—	3655.076	Mo	8	20	—
3659.91	Eu	3 wh	—	Kn	3657.538	Th	3	2	—	3655.031	Nd	5	1	Kn
3659.90	Dy	3	1	m	3657.495	Ta	15	2	—	3655.021	Ce	3	—	Kn
3659.862	Sm	1	2	—	3657.492	V I	20	5	—	3655.000	Al II	—	[100]	Sy
3659.767	Cl II	—	[2]	Mu	3657.43	Fe	2	—	—	3654.99	Fe	3	1	—
3659.765	Ti II	50	150	—	3657.421	Pr	25	4	—	3654.979	Al II	—	[18]	Sy
3659.75	Fe	3	—	—	3657.408	Eu	2 h	2 h	—	3654.974	Ce	15	3	—
3659.633	Th	4	1	—	3657.384	Ce	2	—	—	3654.930	Re	15	—	—
3659.620	Sm II	10	6	—	3657.354	Mo	30	30	—	3654.89	Se	—	[3]	Bl
3659.606	Cb	15	500	—	3657.322	U	6	15	—	3654.890	U	25	—	—
3659.586	U	10	2	—	3657.316	Sm	15	1	—	3654.88	Tb	70	30	Ed
3659.55	Er	12 w	1	—	3657.271	Ta	18	1 h	—	3654.878	Dy	5	1	—
3659.54	W	6	3	—	3657.2	Rn	—	[10]	Pe	3654.873	Rh I	40	10	—
3659.521	Fe I	125	80	—	3657.174	Ca	2	2	—	3654.847	Sm II	9	1	—
3659.513	Th	10	12	—	3657.173	Ru I	2	4	—	3654.833	Hg I	—	[200]	Cn
3659.502	Ce	2	—	—	3657.139	Fe I	20	7	—	3654.71	W	—	12	—
3659.50	A I	—	[100]	Ms	3657.110	Cb	5	5	—	3654.67	Au	3	3	—
3659.50	Br	—	[25]	Bl	3657.056	I II	—	[15]	Ke	3654.66	Fe I	4	—	—
3659.45	Tb	15	3	Ed	3656.966	Co I	60	6	—	3654.637	Gd	200 W	200	—
3659.419	Pt I	5	2	—	3656.95	Cl	—	[15]	Bl	3654.609	Pr	6	—	—
3659.4	Bi II	—	2	MI	3656.932	U	8	8	—	3654.592	Ti I	100	40	—
3659.359	Mo	30	30	—	3656.902	Os I	150	30	—	3654.592	Ce	2	—	—
3659.353	Cu I	8	4	—	3656.894	Ta	15	2 h	—	3654.583	Mo	25	20	—
3659.316	W	10	6	—	3656.880	Zr I	10	—	—	3654.579	Th	4	4	—
3659.26	P	—	[50]	Gu	3656.85	Dy	4	2	m	3654.51	S II	—	[8]	Hn
3659.227	Ce	20	6	—	3656.788	Cu I	4	3	—	3654.492	Os	100	15	—
3659.159	U	15	1	—	3656.78	As II	—	5	Ro	3654.466	Th	4	1	—
3659.154	W	3	5	—	3656.77	Tb	8	3	Ed	3654.45	Ho	6	6	Ex

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3654.446	Co I	35	-	-	-	3652.04	I II	-	-	[2]	Mu	3649.52	Ho	2	4 h	-	Ex
3654.425	Pd I	-	4	-	-	3651.981	He I	-	-	[7]	Ps	3649.509	La I	40	8	-	-
3654.423	Cb	10	10	-	-	3651.967	Re I	40	-	-	-	3649.508	Fe I	100	100	-	S
3654.405	Ru	3	40	-	-	3651.927	U	6	-	-	-	3649.507	Re	3 h	-	-	-
3654.38	Bi II	7	5 s	-	-	3651.86	Tb	30	8	-	Ed	3649.506	Sm II	100	30	-	-
3654.363	Er	4	-	-	-	3651.823	Sm	2 h	2 h	-	-	3649.47	Mo	5	5	-	-
3654.358	Re I	8	-	-	-	3651.798	Sc II	50	45	-	-	3649.441	Gd	5	5	-	-
3654.341	Pr	8	2	-	-	3651.772	Hf	15	1	-	-	3649.41	Tb	8	3	-	Ed
3654.30	Cu I	10 wh	2 h	-	-	3651.704	Sb	2 h	3	-	Sp	3649.410	U	-	4	-	-
3654.30	Tb	8	-	-	Ed	3651.685	U	4	5	-	-	3649.405	Pr	10	3	-	-
3654.294	U	3	4	-	-	3651.661	Re	25 W	-	-	-	3649.351	Co	200	4	-	m
3654.227	Cb	-	5 h	-	-	3651.66	Si	-	3	-	Sy	3649.304	Fe I	60	25	-	-
3654.202	W	12	10	-	-	3651.660	Cr II	1	18	-	-	3649.251	Th	10	10	-	-
3654.17	Dy	4	1	-	m	3651.651	Ce	5	-	-	-	3649.221	Al II	-	-	[2]	Sy
3654.156	Nd	10	10	-	-	3651.592	Nd	10	6 h	-	-	3649.182	Al II	-	-	[5]	Sy
3654.130	U	5	1	-	-	3651.583	Th	5	2	-	-	3649.105	Hf	20	5	-	-
3654.094	Ce	2	-	-	-	3651.516	Sm	6	5	-	Kn	3649.09	Au	3	5 h	-	-
3653.992	Pt I	2	1 h	-	-	3651.472	Zr II	-	5	-	-	3649.020	W	6	7	-	-
3653.976	Fe	4	2 h	-	-	3651.469	Fe I	300	200	-	S	3649.006	Sm	2	1	-	-
3653.97	Kr II	-	[250 hl]	-	Me	3651.423	Sm	3 d	-	-	Kn	3649.0	Pb II	-	[20]	-	Ea
3653.93	Au	5	2	-	-	3651.356	Rh I	2	1	-	-	3648.997	Cr I	40	20	-	-
3653.928	Sr I	15	3	-	ISn	3651.352	Mo	10	2	-	-	3648.978	Er	4	1	-	-
3653.912	Cr I	100	25	-	-	3651.344	U	-	2	-	-	3648.966	V I	80	50	-	-
3653.897	Mo	3	2	-	-	3651.306	Ce	2	1	-	-	3648.935	U	4	4	-	-
3653.87	Tb	15	8	-	Ed	3651.305	Cb	2	-	-	-	3648.86	Ti II	3	10	-	-
3653.828	Ta	3	1	-	-	3651.258	Co I	20	-	-	-	3648.820	Ce	4	-	-	-
3653.763	Fe I	25	10	-	-	3651.244	U	2	-	-	-	3648.807	Dy	50	30	-	-
3653.759	Ir I	2 h	-	-	-	3651.186	Cb	10	400	-	-	3648.806	Os	100	10	-	-
3653.725	Os	30	10	-	-	3651.119	Gd	10	15	-	-	3648.639	Th	4	2	-	-
3653.670	Ce	18	8	-	-	3651.107	Mo	2	50	-	-	3648.61	Kr II	-	[40 hl]	-	Me
3653.653	Pr	4	1	-	-	3651.10	Fe I	10	3	-	-	3648.607	Mo	10	10	-	-
3653.615	Re I	15	-	-	-	3651.090	Al II	-	[18]	-	Sy	3648.545	U	5	2	-	-
3653.615	Cb	10	5	-	-	3651.073	Cs	-	[4]	-	Sv	3648.534	Cr I	10	8	-	-
3653.61	Tm	30	20	-	Me	3651.064	Al II	-	[50]	-	Sy	3648.528	Ce	2	-	-	-
3653.606	Yt	5	2	-	-	3651.038	Pr	9	2	-	-	3648.475	Gd	20	-	-	-
3653.59	Th	3	2	-	-	3651.02	Kr II	-	[25 hl]	-	Me	3648.422	Th	8	4	-	-
3653.55	Mo	4 d	4	-	-	3651.004	W	10	12	-	-	3648.40	Dy	3	1	-	Ed
3653.524	W	5	1	-	-	3650.989	Zr	2	-	-	-	3648.391	Zr	2	-	-	-
3653.496	Ti I	500	200	-	-	3650.981	Sm II	25	10	-	-	3648.383	Cu I	10	7	-	-
3653.495	Ca	-	3	-	-	3650.968	Gd	25	30	-	-	3648.35	Hf II	5	8	-	Me
3653.491	Au II	3	5	-	-	3650.93	Tb	8	8	-	Ed	3648.304	Os	10	5	-	-
3653.479	Sm	15	2	-	-	3650.90	A	-	[5]	-	Rt	3648.3	Bi II	-	3	-	Ml
3653.393	Ta	3	1	-	-	3650.881	Ce	12	3	-	-	3648.299	Pr	30	10	-	-
3653.38	P	-	[100 w]	-	Gu	3650.855	Cu I	4	1 h	-	-	3648.27	Eu	6 w	5	-	Kn
3653.338	W	1	12	-	-	3650.806	Cb	15	15	-	-	3648.251	U	5	-	-	-
3653.323	Ir I	3	-	-	Ah	3650.771	Th	10	10	-	-	3648.188	Nd	12	8	-	-
3653.270	Sr I	30	8	-	ISn	3650.747	Au I	5	10	-	-	3648.170	Th	6	4	-	-
3653.209	U	10	1	-	-	3650.725	Zr II	2	2 h	-	-	3648.146	U	2	5	-	-
3653.201	Os	10 W	5 W	-	-	3650.694	Nd	15	6	-	-	3648.145	Co	20	2	-	-
3653.191	Ir	15	50	-	-	3650.679	U	3	2	-	-	3648.096	Ce	3	-	-	-
3653.161	Re	4 h	-	-	-	3650.62	Ca	-	3	-	Ad	3648.028	Ta	3	-	-	-
3653.150	Nd	10	4	-	Kn	3650.583	Mo	3	2	-	-	3648.01	Cl II	-	[2]	-	Mu
3653.113	Sm	10	2	-	-	3650.53	Fe	3	-	-	-	3647.954	Ce	10	5	-	-
3653.108	Ce	15	5	-	-	3650.53	Hf	2	2	-	Me	3647.95	K II	-	[5]	-	Bn
3653.05	Se II	-	[25]	-	Bt	3650.517	Cb	2	3	-	-	3647.88	Ca	-	3	-	-
3652.97	Tb	15	8	-	Ed	3650.510	Th	2 d	1 d	-	-	3647.867	Cb	3	-	-	Me
3652.95	Ti I	150	50 l	-	Fl	3650.473	Zr	3	-	-	-	3647.844	Fe I	500	400	-	S
3652.879	Er	20	4	-	-	3650.415	Nd	12	6	-	-	3647.77	Lu	100	5	-	Me
3652.760	W	3	4	-	-	3650.414	Er	15	2	-	-	3647.751	Ce	10	3	-	-
3652.73	Fe	6	-	-	-	3650.40	Tb	50	100	-	Ed	3647.75	Tb	50	-	-	Ed
3652.65	Eu	5 w	4 wh	-	-	3650.381	Os	15	4	-	-	3647.73	Tm	30	15	-	Me
3652.587	Cr	3	-	-	-	3650.344	Cr	-	40	-	-	3647.724	Cb	2	2	-	Me
3652.583	Er	20	3	-	-	3650.339	U	3	-	-	-	3647.702	Ir I	20	-	-	-
3652.56	Ca	3	2	-	-	3650.322	Ru I	3	12	-	-	3647.659	Co I	100	8	-	-
3652.560	Gd	20	25	-	-	3650.280	Fe I	70	50	-	-	3647.659	U	2	3 h	-	-
3652.543	Co I	200 r	-	-	-	3650.19	N	-	[70]	-	Du	3647.648	Th	8	8	-	-
3652.542	Th	10	10	-	-	3650.176	Pr	30	6	-	-	3647.616	Rb II	-	[2]	-	Rr
3652.474	Mo	-	25	-	-	3650.174	La II	100	60	-	-	3647.546	Ce	3	-	-	m
3652.47	Fe	4	-	-	-	3650.168	Sm II	25	5	-	-	3647.542	Pr	4	2	-	-
3652.43	Cu I	10 wh	1 h	-	-	3650.146	Hg I	200	500	-	Cn	3647.525	W	8	9	-	-
3652.423	V I	40	30 h	-	-	3650.121	Ce	10	1	-	-	3647.492	Hf II	20	2	-	-
3652.409	Ta	5	-	-	-	3650.12	Xe	-	[3]	-	Hu	3647.426	Fe I	20	15	-	-
3652.380	Pr	20	3	-	-	3650.10	Cl II	3	[4]	-	Mu	3647.394	Cr II	2	20	-	-
3652.332	Mo	-	25	-	-	3650.046	Mo	3	25	-	-	3647.388	Co	8 h	-	-	-
3652.325	Ce	2	-	-	-	3650.032	Fe I	70	30	-	-	3647.338	V I	20	-	-	-
3652.316	Ru	2	5	-	-	3650.00	Dy	5	2	-	m	3647.309	Cb	10	20	-	-
3652.275	Cb	1	3 h	-	Me	3649.862	Cr	15	4	-	-	3647.307	Th	3 d	2 d	-	-
3652.263	Ce	3	-	-	-	3649.852	Cb	20	20	-	-	3647.270	Sm	8	3	-	-
3652.26	Tb	30	8	-	Ed	3649.832	A I	-	[800]	-	IHu	3647.24	Tm	10	20	-	Me
3652.252	Pt	2	1 h	-	-	3649.818	Eu	5	2	-	-	3647.23	Er	4	-	-	-
3652.210	Sm II	5	4	-	-	3649.737	Th	8	3	-	-	3647.147	W	4	3	-	-
3652.168	Th	10	10	-	-	3649.729	U	1	8	-	-	3647.105	Ir I	3	-	-	Ab
3652.114	W II	3	12	-	-	3649.726	Ce II	10	1	-	-	3647.089	Co I	30	4	-	-
3652.104	He I	-	[2]	-	Ps	3649.597	Cd I	20	15	-	-	3647.06	Tb	30	8	-	Ed
3652.074	U	12	8	-	-	3649.55	Ra II	-	[1000]	-	Rs	3647.03	Eu	2 h	-	-	-

3646.9—3639.7 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3646.965	Ce	15	5	—	—	3644.717	Th	5	4	—	—	3642.204	Mo	5	10	—	—
3646.892	Zr	3	—	—	—	3644.706	V I	80	50	—	—	3642.174	Ce	2	—	—	—
3646.886	Th	5	4	—	—	3644.699	Ti	35	5	—	—	3642.057	Ta	125	18	—	—
3646.878	Pr	4	2 h	—	—	3644.693	Cr II	5	18	—	—	3642.033	U	6 h	2 h	—	—
3646.869	Mo	3	5	—	—	3644.686	Sc	2	—	—	—	3641.985	F II	—	[60]	Di	—
3646.85	Dy	4	—	Ed	—	3644.66	Nd	10	4	—	—	3641.88	Er	12	1	—	—
3646.847	U	4	10	—	—	3644.587	Fe	2	1	—	—	3641.873	Pr	8	2	—	—
3646.847	V	—	20 h	Me	—	3644.548	Ce II	5	1	—	—	3641.852	W	7	5	—	—
3646.782	Er	5	—	—	—	3644.543	Pr	8	3	—	—	3641.841	Th	6	4	—	—
3646.750	Eu	20	5 h	Kn	—	3644.50	Eu	6 w	1 wh	—	—	3641.830	Cr I	40	15	—	—
3646.660	Eu	10 W	—	—	—	3644.46	Ti I	3	—	m	—	3641.825	Mo	3	3	—	—
3646.652	Ce	10	3	—	—	3644.46	Te	—	[10]	Bl	—	3641.788	Co I	60	8	—	—
3646.628	Re	10	—	—	—	3644.43	Xe II	—	[3]	Hu	—	3641.734	Ce	8	1	—	—
3646.60	Dy	5	2	m	—	3644.426	Nd	—	15	—	—	3641.693	Co I	60	5	—	—
3646.525	W II	10 l	35	—	—	3644.42	Ag	—	2 h	—	—	3641.66	Tb	70	30	Ed	—
3646.491	U	2	6	—	—	3644.410	Ca I	200	15	IWg	—	3641.656	La II	—	4	—	—
3646.46	Tb	8	3	Ed	—	3644.39	Ho	—	4	Ex	—	3641.648	Sm	7	2	—	—
3646.321	Rb II	—	[10]	Rr	—	3644.355	Hf II	25	50	—	—	3641.641	Ni I	6	—	—	—
3646.299	Pr	50	15	—	—	3644.347	Th	5	4	—	—	3641.616	Pr	50	5	—	—
3646.217	U	10	—	—	—	3644.320	Hg	—	[40]	St	—	3641.537	Ce	10	1	—	—
3646.200	Ti I	70	25	—	—	3644.297	Ce	8	1	—	—	3641.522	La I	25	4	—	—
3646.196	Gd	200 w	150	—	—	3644.27	Eu	5 W	—	Kn	—	3641.502	Nd	20	10	—	—
3646.161	Cr	18	8	—	—	3644.27	Te	—	[25]	Bl	—	3641.50	Br	—	[3]	Bl	—
3646.114	Ru	2	8	—	—	3644.245	U	18	2	—	—	3641.49	S	—	[3]	Bl	—
3646.053	Ca	—	2 h	—	—	3644.185	Fe	4	—	—	—	3641.470	Cr I	30	25	—	—
3646.03	U	—	4 wh	—	—	3644.13	Tb	15	3	Ed	—	3641.454	U	6	—	—	—
3646.013	Sm	2	—	—	—	3644.08	Eu	2	1	—	—	3641.408	W II	12	40	—	—
3646.0	bh Sr	4	—	L	—	3643.991	Sm	8	—	—	—	3641.40	Cs	—	[4]	Bs	—
3645.968	Pd I	15	—	—	—	3643.941	Ni I	2	—	—	—	3641.391	Mn	50	50 h	—	—
3645.938	Er	15	2	—	—	3643.89	Dy	15	6	Ed	—	3641.390	Mo	3	3	—	—
3645.929	Cb	1	5	—	—	3643.89	Ne II	—	[18]	Bn	—	3641.385	Cb	5	1	—	—
3645.905	V	—	20	Me	—	3643.864	V I	40	30	—	—	3641.38	Gd	12	12	—	—
3645.90	Ho	—	4	Ex	—	3643.815	Fe	7	1	—	—	3641.332	Cs	—	[5]	Sv	—
3645.898	Sm II	4	2	—	—	3643.76	Tb	30	3	Ed	—	3641.331	Ti II	60	150	—	—
3645.86	Dy	6	4	Ed	—	3643.721	Cb	15	15	—	—	3641.289	Cb	1	5	—	—
3645.825	Fe	80	60	—	—	3643.715	Sm	5	3	—	—	3641.285	Th	4	3	—	—
3645.789	Sm	5 d	—	Kn	—	3643.713	Fe I	6	4	—	—	3641.269	Er	20	2	—	—
3645.776	Nd	8	1	—	—	3643.652	Tm	60	40	Me	—	3641.24	Eu	2 wh	1 h	—	—
3645.711	Ce	2	—	—	—	3643.631	Cu I	5	—	—	—	3641.227	Os	30	10	—	—
3645.660	Pr	30	20	—	—	3643.630	Nd	5	1	—	—	3641.21	U	3	4	—	—
3645.634	Gd	20	20	—	—	3643.626	Fe I	20	8	—	—	3641.114	Th	5	4	—	—
3645.626	Nd	15	6	—	—	3643.522	Cb	2	2	—	—	3641.114	Pr	8	1	—	—
3645.60	Tb	8	—	Ed	—	3643.515	Th	5	1	—	—	3641.114	Nd	6	4	—	—
3645.599	W II	4	20	—	—	3643.514	W	—	6	—	—	3641.10	La II	2	3	Me	—
3645.596	V	15	1	—	—	3643.50	Dy	3	—	Ed	—	3641.096	V I	100 h	30 wh	—	—
3645.590	Re	6	—	—	—	3643.481	Ir	2	—	Ab	—	3641.07	Dy	3	1	m	—
3645.589	Mo	3	3	—	—	3643.47	Mo	1 h	20	—	—	3641.011	F II	—	[6]	Di	—
3645.583	Cr	4	3	—	—	3643.45	Ce	5	—	—	—	3640.989	Mo	4	4	—	—
3645.539	Pr	20	8	—	—	3643.337	Cb	5	10	—	—	3640.948	Eu	8	20	—	—
3645.494	Fe I	15	7	—	—	3643.317	Pr	25	8	—	—	3640.911	Mo	4	4	—	—
3645.461	U	1	2	—	—	3643.314	W	7	5	—	—	3640.891	F II	—	[100]	Di	—
3645.452	Ce II	10 w	2	—	—	3643.26	Tb	15	3	Ed	—	3640.889	Pr	10	2	—	—
3645.43	Eu	5	—	—	—	3643.199	Cr II	5	30	—	—	3640.88	Tb	8	—	Ed	—
3645.416	Dy	300	100	—	—	3643.184	Co I	80	15	—	—	3640.869	Ir I	30	4	Dv	—
3645.414	La II	100	60	—	—	3643.172	Pl I	60	8	—	—	3640.84	Sb II	—	3	—	—
3645.41	Ho	8	8	Ex	—	3643.11	Fe	30	5	—	—	3640.80	Dy	4	1	Ed	—
3645.403	Yt	4	4	—	—	3643.09	A I	—	[100]	Ms	—	3640.757	U	8	20	—	—
3645.399	Er	25 s	12	—	—	3643.014	Ce	2	—	—	—	3640.687	Ce	10	—	—	—
3645.387	Sm II	8	6	—	—	3642.987	Re I	100	—	—	—	3640.640	Ru I	3	12	—	—
3645.38	Tb	50	15	Ed	—	3642.923	Pr	8	2	—	—	3640.636	Cb	8	10	—	—
3645.356	Cb	5	5	—	—	3642.893	Th	3	2	—	—	3640.623	Mo	8	5	—	—
3645.311	Sc II	50	50	—	—	3642.846	U	6	—	—	—	3640.391	Ba	8	4	—	—
3645.303	Ir	25	2 h	—	—	3642.833	Ce	8	1	—	—	3640.390	Fe I	300	200	—	—
3645.290	Sm II	9	7	—	—	3642.819	W	7	5	—	—	3640.388	Cr I	30	5	—	—
3645.232	Cu I	20	5	—	—	3642.81	Fe	20	—	—	—	3640.329	Os I	200	40	—	—
3645.228	Ce II	5	1	—	—	3642.8	Au II	10	5 h	Ex	—	3640.315	Ti I	3	—	—	—
3645.222	Fe	9	—	—	—	3642.798	F II	—	[30]	Di	—	3640.252	Er	20	1	—	—
3645.195	Co I	60	3	—	—	3642.785	Sc II	60	50	—	—	3640.24	Dy	15	6	Ed	—
3645.17	Eu	10 w	5 wh	—	—	3642.776	U	2	5	—	—	3640.235	Nd	16	10	—	—
3645.167	Nd	6	2	—	—	3642.739	Sm II	25	5	—	—	3640.225	Rb II	—	[2]	Rr	—
3645.114	Pr	5	2	—	—	3642.723	Mo	4	2	—	—	3640.189	Gd	10	8	—	—
3645.080	Ca I	3	2 h	—	—	3642.68	Tb	15	8	Ed	—	3640.132	W	9	8	—	—
3645.080	Fe I	20	8	—	—	3642.675	Tr I	300	125	—	—	3640.104	Mn	2	2	—	—
3645.030	U	8	15	—	—	3642.620	Ce	6	—	—	—	3640.050	V I	5	2	—	—
3644.99	Eu	5 w	—	—	—	3642.505	Os	20	10	—	—	3640.035	U	1	4	—	—
3644.967	Ce	2	—	—	—	3642.5	Rn	—	[5]	Pe	—	3639.906	Er	8	—	—	—
3644.935	Cb	5	10	—	—	3642.46	Nd	20	6	—	—	3639.867	Ce II	3	—	—	—
3644.93	Tb	15	—	Ed	—	3642.443	U	10	8	—	—	3639.860	Rb II	—	[15]	Rr	—
3644.91	Xe II	—	[3]	Hu	—	3642.413	Mo	3	2	—	—	3639.86	Dy	4	2	Ed	—
3644.897	Pr	5	2	—	—	3642.387	Ni I	2	—	—	—	3639.854	Ir	2	—	—	—
3644.86	Ne II	—	[12]	Bn	—	3642.35	Lu	2	—	Me	—	3639.85	A II	—	[25]	Rt	—
3644.851	U	4	6	—	—	3642.34	Au	5	1 wh	—	—	3639.82	Tb	30	8	Ed	—
3644.798	Fe	20	6	—	—	3642.250	Ce	4	—	—	—	3639.802	Cr I	60	25	—	—
3644.765	Ca I	30	—	IWg	—	3642.249	Th	10	4	—	—	3639.770	Pr	10	2	—	—
3644.73	Er	3	—	—	—	3642.205	Nd	2	—	—	—	3639.71	U	—	2	—	—

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3639.64	Mo	—	10	—	3637.48	Kr II	—	[20 hl]	Me	3635.196	Fe I	12	2	—
3639.6	air	—	15	m	3637.466	Ru	2	10	—	3635.17	Tb	8	—	Ed
3639.580	Pb I	300	50 h	—	3637.460	Ce II	5	10	—	3635.144	Mo	100 h	10	—
3639.574	Zr	2	—	—	3637.384	W	10	—	—	3635.133	Au II	3	10	—
3639.570	Ce	5	—	—	3637.36	Tb	8	—	Ed	3635.106	Nd	6	6	—
3639.546	Mo	4	3	—	3637.34	Au	2	3 h	—	3635.010	U	1	2	—
3639.53	Zn	20	[5]	Vs	3637.323	Co I	30	5	—	3634.994	Cr	25	12	—
3639.512	Rh I	125	70	—	3637.27	Dy	10	3	Ed	3634.941	Ni I	50	10	—
3639.489	U	25	—	—	3637.250	Fe I	12	5	—	3634.929	Ru	50	100	—
3639.48	Tb	8	—	Ed	3637.235	Re	6	—	—	3634.908	Sm II	20	2	—
3639.449	Th	10	10	—	3637.229	Nd	20	12	—	3634.871	Nd	30	15	—
3639.444	Co I	200	20	—	3637.168	Er	12	1	—	3634.83	A II	—	[5]	Rt
3639.409	Sm	6	5	—	3637.163	Pr	4	1	—	3634.8	Rn	—	[250]	Wo
3639.40	Se II	—	[12]	Bl	3637.148	La II	50	40	—	3634.760	Gd	20	20	—
3639.336	Ir	3	—	—	3637.062	Re I	25	—	—	3634.75	Cs	—	[6]	Bs
3639.331	Cb	15	20	—	3637.05	A	—	[10]	Rt	3634.75	Tb	8	—	Ed
3639.312	Ce	5	—	—	3637.00	K II	—	[10]	Bn	3634.712	Co	70	10	—
3639.287	Yt I	3	2	—	3636.997	Ir	2 h	—	—	3634.695	Pd I	2000 R	1000 R	—
3639.257	Sm II	10	2	—	3636.995	Fe I	20	10	—	3634.687	Fe	20	2	—
3639.25	La II	2	2	Me	3636.990	Nd	20	12	—	3634.68	Ho	6	4 h	Ex
3639.206	U	—	5	—	3636.957	Cb	20 W	30 W	—	3634.679	Er	8	—	—
3639.18	W	—	10	—	3636.946	Ba	18	4	Sz	3634.600	Cb	2	—	—
3639.175	Nd	4 d	1	—	3636.831	Rb	—	[3]	Rr	3634.584	Th	8	4	—
3639.165	Ir	3	—	—	3636.827	Mo	3	2	—	3634.560	U	8	1	—
3639.15	Cl II	—	[2]	Mu	3636.761	Re	3	—	—	3634.551	Yb	2	—	—
3639.148	Re	10 h	—	—	3636.750	Fe	3	—	—	3634.467	Pr	20	4	—
3639.055	Cb	2	20	—	3636.736	Ce	2	—	—	3634.461	A I	—	[300]	IHu
3639.053	Gd	10	15	—	3636.736	W	7	6	—	3634.443	Cb	5	15	—
3639.024	V I	70	60	—	3636.73	Eu	5	4	—	3634.432	Ce	2	—	—
3639.014	Er	6 l	—	—	3636.721	Co I	40	6	—	3634.42	Kr II	—	[3 whl]	Me
3639.007	Mo	3	4	—	3636.660	La I	20	2	—	3634.367	He I	—	[2]	Ps
3638.95	Tb	15	—	Ed	3636.650	Fe	5	3	—	3634.334	Fe I	15	5	—
3638.89	Dy	2	1 h	m	3636.64	Mo	—	10	—	3634.282	Nd	25	30	—
3638.865	Pr	3	—	—	3636.590	Cr I	60	30	—	3634.271	Sm II	100	25	—
3638.81	W	1	5	—	3636.567	Th	4	4	—	3634.27	Dy	3	3 h	m
3638.793	Pt I	250	10	—	3636.558	Ce	2	—	—	3634.25	S	—	[35 h]	Ms
3638.786	Cb	10	10	—	3636.499	Pr	8	2	—	3634.235	He I	—	[15]	Ps
3638.748	Sm	40	8	—	3636.490	Fe	3	1	—	3634.214	Th	5	6	—
3638.722	Zr I	5	—	—	3636.448	Zr II	200	30	—	3634.151	Zr I	25	2	—
3638.70	—	—	[10]	Fl	3636.371	Ce	3	1	—	3634.014	Cr	—	6	—
3638.678	Er	15	1	—	3636.312	U	10	—	—	3633.921	Ru	2	5	—
3638.65	U	5	8	—	3636.25	Lu	25	3	Me	3633.91	V I	35	8	Me
3638.645	Th	6	2	—	3636.235	Sm	10	2	—	3633.865	Co	2	—	—
3638.576	Pr	8	1	—	3636.234	Fe	15	10	—	3633.862	Ir I	3	—	—
3638.56	Mo	3	3	—	3636.199	Ir I	50	25	—	3633.833	Fe	7	3	—
3638.46	Tb	80	50	Ed	3636.186	Fe I	40	10	—	3633.788	Ta	35	10 h	—
3638.425	Mo	3	3	—	3636.168	Sc	3	—	—	3633.77	Dy	4	1	m
3638.42	Tm	10	2	Me	3636.167	Th	3	3	—	3633.714	Cb	8	3	—
3638.35	V	2	—	Me	3636.16	Tb	15	—	Ed	3633.700	Th	1 d	2	—
3638.34	Hg	—	[100]	Ps	3636.109	Sm	5	1	—	3633.665	Ne I	—	[75]	IHu
3638.32	Eu	5	2	Kn	3636.070	Ce	5	1	—	3633.66	Tb	8	—	Ed
3638.32	Ho	8	10	Ex	3636.044	Sm	5	2	—	3633.64	Br	—	[6]	Bl
3638.300	Pr	9	2	—	3635.95	Ca	4	2 h	Ad	3633.574	W	4	3	—
3638.298	Fe I	100	80	—	3635.944	Th	8	4	—	3633.541	Er	15	2	—
3638.275	Ce	10	2	—	3635.916	Cu I	50	7	—	3633.54	Kr II	—	[3 h]	Me
3638.205	Mo	20	10	—	3635.883	Ce	2	—	—	3633.489	Zr II	8	8	—
3638.200	U	5	2	—	3635.874	V	50	25 h	—	3633.469	Nd	12	4	—
3638.15	S	—	[3]	Hn	3635.87	Eu	—	4	—	3633.458	Ti	35	5	—
3638.083	Eu	5	5	—	3635.854	Cb	3	8	—	3633.400	Ce II	8	—	—
3638.046	Ce	6	—	—	3635.784	Ce	2	—	—	3633.36	Th	3	3	—
3638.016	Ru	1	4	—	3635.682	Mn	10	5	—	3633.348	Pr	7	2	—
3637.966	Ti I	30	8	—	3635.67	A	—	[3]	Rt	3633.333	Co I	8	—	—
3637.936	W	5	4	—	3635.65	Eu	7 W	—	Kn	3633.311	Cb	3	30	—
3637.93	Kr II	—	[4 whl]	Me	3635.612	Mo	4	3	—	3633.29	Tb	30	30	Ed
3637.89	A	—	[3]	Rt	3635.579	U	4	8	—	3633.29	U	8 d	15 d	—
3637.866	Fe I	20	7	—	3635.516	Ru I	2	8	—	3633.29	Mo	—	20	—
3637.843	Re I	50	—	—	3635.488	Ir I	35	4 h	—	3633.26	Dy	25	—	m
3637.837	I	—	[18]	Ke	3635.463	Ti I	200	100	—	3633.24	Au II	1	15	—
3637.829	Sb	2 h	60	—	3635.463	Cb	5	5	—	3633.185	Hf	6	8	—
3637.827	Cb	20	30	—	3635.463	V I	40	5	—	3633.123	Yt II	50	100	—
3637.791	Mo	—	20	—	3635.434	W	2	—	—	3633.078	Fe	10	3	—
3637.783	Nd	10	8	—	3635.429	Mo	25	5	—	3633.075	Ce	2	—	—
3637.760	V	40	40	—	3635.42	Tb	30	8	Ed	3633.06	Xe I	—	[6]	Me
3637.755	Yb	15	30	—	3635.403	U	6	5	—	3633.00	Dy	10	3	Ed
3637.75	Tb	8	—	Ed	3635.372	Th	15	10	—	3632.999	Cb	5	3	—
3637.749	Ce	8	1	—	3635.35	Ho	—	4	Ex	3632.979	Fe I	12	8	—
3637.742	Gd	4	—	—	3635.334	Yt II	2 h	12	—	3632.842	Co	60	—	—
3637.676	Eu	12	10	—	3635.324	Cb	5	8	—	3632.839	Cr	80	35	—
3637.647	Pr	12	5	—	3635.310	Sc	3	2	—	3632.785	Er	5	1	—
3637.59	Hf	6	2	—	3635.299	U	10	—	—	3632.782	Ce	3	—	—
3637.574	Ce	2	—	—	3635.284	Pr	25	7	—	3632.75	Ne II	—	[4]	Bn
3637.557	Th	8	5	—	3635.281	Cr I	25	8	—	3632.73	Dy	10	4	Ed
3637.538	Cb	10	10	—	3635.26	Dy	10	6	Ed	3632.713	U	3	2	—
3637.518	Mo	8	5	—	3635.246	Th	4	5	—	3632.708	W	9	8	—
3637.506	U	5	4	—	3635.202	Ti I	10	5	—	3632.691	Hf	5	2	—

3632.6—3624.1 Å.

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
3632.684	A I	-	[300]	IHu	3629.467	Cb	-	30	-	3626.70	Ho	20	15	Ex
3632.626	Th	6	-	-	3629.440	Dy	100	50	-	3626.617	Ta	125	18	-
3632.56	Au	-	2 wh	-	3629.43	Tb	15	8	Ed	3626.590	Rh I	150	60	-
3632.558	Cu I	25	3	-	3629.39	Er	10	1	-	3626.53	S	-	[10]	Hn
3632.557	Ir	2	-	-	3629.309	V I	50	2	-	3626.5	Rn	-	[25]	Pe
3632.556	Fe	30	25	-	3629.309	Mo	6	6	-	3626.50	Tb	30	15	Ed
3632.490	Kr I	-	[4]	IHu	3629.305	Ce	2	-	-	3626.496	Sm II	2	1	-
3632.48	I II	-	[2]	Mu	3629.217	Sm II	6	1	-	3626.485	Pr	8	2	-
3632.38	Hg II	-	[10]	Ps	3629.200	Re	4	-	-	3626.42	Er	2 d	2	-
3632.303	Ce	6	-	-	3629.158	Ir I	10	2	-	3626.42	K	-	[15]	Bn
3632.175	Eu	30	10	-	3629.144	Sr I	30	-	ISn	3626.42	Gd	5	5	-
3632.17	U	-	3 hd	-	3629.126	Zr II	2	-	-	3626.360	U	10	-	-
3632.124	V	-	70	Me	3629.058	Eu	4	-	-	3626.337	Cr	20	3	-
3632.106	Co	10	2	-	3628.94	Er	2	-	-	3626.33	Cu	-	2	-
3632.040	Fe	50	50	-	3628.930	W	-	15	-	3626.286	Ir I	30	10	-
3631.999	Ti	6	-	-	3628.90	Lu	2	-	Me	3626.184	Mo	20	20	-
3631.948	W	15	10	-	3628.870	Pt	6	2 h	-	3626.171	Fe	2	-	-
3631.948	Co I	20	-	-	3628.822	La II	80	40 h	-	3626.13	Tb	8	3	Ed
3631.93	Zn	15	[1]	Vs	3628.818	Pr	8	1	-	3626.085	Ti I	25	5	-
3631.88	I II	-	[2]	Mu	3628.813	Ce	8	-	-	3626.010	Co I	5	-	-
3631.87	Kr II	-	[200 hl]	Me	3628.810	Fe	4	1	-	3625.980	U	5	15 wh	-
3631.78	Eu	3	-	m	3628.706	Yt II	40	50	-	3625.940	Th	6	6	-
3631.75	Ho	8	4 h	Ex	3628.705	Er	25	12 h	-	3625.906	Re I	10	-	-
3631.714	Ir I	10	2	-	3628.68	Tb	15	3	Ed	3625.768	Ce	2	-	-
3631.711	Ru I	2	8	-	3628.670	Ir I	100	30	-	3625.75	Ca I	5	2	-
3631.687	Cr II	10	60	-	3628.669	Ta	-	18	-	3625.713	Cb	10	15	-
3631.51	Ca	-	2	Ad	3628.655	Mo	5	6	-	3625.706	Ir I	30	7	-
3631.464	Fe I	500	300	S	3628.622	Ce	10 s	1	-	3625.68	Ta	15	-	Ks
3631.46	Tb	30	-	Ed	3628.60	Ca I	8	-	Cw	3625.637	Ce	4	-	-
3631.40	P II	-	[50]	Gu	3628.46	Eu	-	2	-	3625.628	Th	8	8	-
3631.391	Co I	50 W	25	m	3628.445	Nd	6	4	Kn	3625.607	V	4	125	Me
3631.38	Se	-	[25]	Bt	3628.345	Sr I	10	-	ISn	3625.571	U	8	-	-
3631.315	Ti	2	-	-	3628.38	W	3	20 d	-	3625.56	Mo	-	25	-
3631.266	Na II	12	[100]	Fr	3628.350	Mo	10	5	-	3625.54	Tb	50	15	Ed
3631.194	Ce I, II	50	3	-	3628.247	Ce	10	-	-	3625.46	Ho	6	4 h	Ex
3631.139	Sm	40	15	-	3628.20	Tb	100	15	Ed	3625.405	W	10	10	-
3631.096	Fe I	25	10	-	3628.177	Pr	6	1	-	3625.405	Pr	5	2	-
3631.020	Nd	10	8	-	3628.176	Cb	1	50	-	3625.395	Zr I	4	-	-
3630.967	Pr	50	20	-	3628.157	Kr I	-	[10]	I	3625.375	Ce I	6	-	-
3630.955	W II	-	7	-	3628.113	Pt I	300 W	20	-	3625.37	Rn I	-	[3]	Rs
3630.947	Ca I	10	-	IWg	3628.094	Fe I	10	3	-	3625.282	Er	8	1	-
3630.88	Tb	15	-	Ed	3628.06	Ne II	-	[12]	Bn	3625.267	Gd	15	15	-
3630.874	Hf II	15	6	-	3628.041	Er	15	1	-	3625.250	Ti	2	1	-
3630.853	Sm	3	3	-	3627.965	Sm II	8	3	-	3625.238	Ta	70 r	2 h	-
3630.821	W	9	8	-	3627.870	Cb	3	3	Me	3625.196	Ru I	4	30	-
3630.787	Ce	3 w	-	-	3627.843	Er	5	1	-	3625.171	Cb	8	15	-
3630.748	Ca I	150	9	IWg	3627.832	Hf	5	-	-	3625.161	Ce	4	-	-
3630.740	Sc II	50	70	-	3627.808	Co I	200	-	-	3625.148	Fe I	70	35	-
3630.733	U	8	20	-	3627.803	Rh I	5	3	-	3625.088	U	-	3	-
3630.695	Cb	2	1	-	3627.799	Pr	12	2	-	3624.96	Ca	-	3	-
3630.669	Sm	5	5	-	3627.790	Fe	8	1	-	3624.958	Co I	20	-	-
3630.65	Hg	-	[100]	Ps	3627.785	Eu	2	-	-	3624.901	Gd	20	30	-
3630.642	Ba	15	5	-	3627.782	In II	-	[5]	Ps	3624.898	Th	8	8	-
3630.616	Cb	5	15	-	3627.712	V	4	50	Me	3624.890	Fe II	2	-	-
3630.50	Eu	3 d	-	-	3627.71	Ti II	2	12	-	3624.825	Ti II	60	125	-
3630.46	Dy	10	-	m	3627.70	U	8	-	-	3624.818	U	5	-	-
3630.421	Ce	6	1	-	3627.67	Tb	8	-	Ed	3624.814	Fe	12	2	-
3630.349	Fe I	40	15	-	3627.55	Fe	3	-	-	3624.8	bh Ca	4	-	L
3630.318	W	10	10	-	3627.499	I	-	[3]	Ke	3624.80	Tb	15	3	Ed
3630.28	Tb	30	8	Ed	3627.484	U	2	8	-	3624.733	Ni I	150	15	-
3630.242	Er	25	6	-	3627.444	Sm	9	4	-	3624.71	Ag I	25 h	-	Bx
3630.20	Ho	-	4	Ex	3627.44	Sb II	1	3 h	-	3624.68	P II	-	[5]	Gu
3630.18	Dy	15	15	Ed	3627.424	Eu	3	5	-	3624.654	Nd	20	6	Kn
3630.147	Ce	5	-	-	3627.41	Nd	20	15 h	-	3624.625	Mo	5	5	-
3630.086	W	1	7	-	3627.35	Mo	-	30	Ex	3624.621	Sc	2	2 h	-
3630.061	Er	8	1	-	3627.33	Cu I	10 wh	5 wh	Hs	3624.601	Er	10	1	-
3630.024	Zr II	15	12	-	3627.289	Ru	2	4	-	3624.571	U	4	1	-
3629.99	La II	2	2	Me	3627.240	W	12	10	-	3624.56	Cs	-	[4]	Bs
3629.953	Os	40	12	-	3627.19	Tb	8	-	Ed	3624.474	Th	4	1	-
3629.932	Nd	10	6	-	3627.183	Rh I	4	2	-	3624.468	W	3	1	-
3629.915	Sb II	2	15 h	-	3627.18	Ho	15	15	Ex	3624.464	Mo	25	25	-
3629.906	Ni I	4	3 h	-	3627.048	Eu	2	-	-	3624.419	Sm	3 d	3	-
3629.90	Yb	2	5	-	3627.04	Fe	10	3	-	3624.357	Cb	3	3	Me
3629.853	Er	4	1	-	3627.017	Ta	18	1	-	3624.329	Co I	8	4	-
3629.806	Ce	5	-	-	3626.994	Sm II	50	40	-	3624.319	Nd	6	2	Kn
3629.797	Eu	40	50 h	-	3626.986	Ce	6 w	-	-	3624.307	Fe I	10	2	-
3629.794	Cu I	15	2	Hs	3626.925	Ti	10	-	-	3624.306	Pr	3	-	-
3629.755	Ir I	15	4	-	3626.91	Kr I	-	[2]	Me	3624.278	Er	10	1	-
3629.741	Mn	100	30	-	3626.873	Er	3	-	-	3624.27	-	-	10	-
3629.715	Pr	20	3	-	3626.87	Tb	15	3	Ed	3624.25	Dy	10	10	Ed
3629.7	Rn	-	[10]	Pe	3626.859	Nd	10	1 h	-	3624.236	Cu I	30 W	3 wh	Hs
3629.61	Fe	4	-	-	3626.76	Dy	4 h	1 h	Ed	3624.20	Tm	6	1	Me
3629.591	U	2	3	-	3626.759	I	-	[3]	Ke	3624.179	Ce	10	-	-
3629.517	Gd	40	60	-	3626.744	Ru	3	40	-	3624.17	Ta	3 h	3 s	-
3629.477	Sm	5	-	-	3626.715	Fe	2 h	-	-	3624.111	Ca I	150	15	IWg

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3624.070	Zn	10	3	-	-	3621.108	Fe	2	-	-	-	3618.928	V	-	-	100	-
3624.055	Fe	2	-	-	-	3621.088	Pr	20 h	2 h	-	Kn	3618.92	Er	10 w	6	-	-
3624.000	Hf II	15	20	-	-	3621.032	U	2	5	-	-	3618.901	Cb	5	5	-	-
3623.99	Lu	20	40	-	Me	3621.027	Cb	10	15	-	-	3618.88	Cl II	-	-	[3]	Mu
3623.977	Th	4	6	-	-	3621.00	Yb	-	5	-	Me	3618.780	Ce	2	-	-	-
3623.957	Zr	2	1	-	-	3621.0	Rn	-	[250]	-	Wo	3618.769	Fe I	400	400	-	S
3623.92	Tb	30	8	-	Ed	3620.945	Er	25	15	-	-	3618.745	Th	2	-	-	-
3623.864	Zr I	40	7	-	-	3620.941	Yt I	2 h	12	-	-	3618.73	Se II	-	-	[35]	Bl
3623.843	Ce I, II	60	5	-	-	3620.938	Sm	4 d	3	-	-	3618.70	Rn I	-	-	[8]	Rs
3623.803	Ir I	20	4	-	-	3620.93	Br	-	[6]	-	Bl	3618.582	Ce II	10	3	-	-
3623.792	Mn	75	40	-	-	3620.91	Ho	-	4	-	Ex	3618.53	Hg	-	-	[50]	Ps
3623.772	Fe I	35	7	-	-	3620.890	Eu	7	5	-	-	3618.523	Sm	4	-	-	-
3623.758	Ce	8	1	-	-	3620.85	Pb	-	5	-	Sx	3618.522	Dy	80	10	-	-
3623.72	Eu	4 d	4 d	-	-	3620.83	W	-	8	-	-	3618.486	U	2	10	-	-
3623.70	Mo	-	50	-	-	3620.8	bh La	3 h	-	-	Me	3618.452	W II	-	12	-	-
3623.635	Ru	2	10	-	-	3620.78	Fe	3	-	-	-	3618.442	Cb	10	5	-	-
3623.61	Kr II	-	[30 hi]	-	Me	3620.74	Nd	10	4	-	-	3618.429	K II	-	-	[20]	Dm
3623.53	Rn I	-	[3]	-	Rs	3620.65	P	-	[15]	-	Gu	3618.423	Ce	3	-	-	-
3623.514	W	8	7	-	-	3620.6	bh La	2 h	-	-	Me	3618.389	Fe I	8	4	-	-
3623.446	Fe I	15	5	-	-	3620.590	Cb	-	5 h	-	-	3618.384	Th	5	1	-	-
3623.44	Eu	4	-	-	Kn	3620.582	Sm II	4	2	-	-	3618.35	Mo	-	20	-	-
3623.44	Au	-	3	-	-	3620.56	Dy	3	1	-	m	3618.301	Fe I	4	1	-	-
3623.315	Sm II	15	7	-	-	3620.557	U	1	2	-	-	3618.191	Eu	8 h	-	-	-
3623.231	Mo	15	15	-	-	3620.550	Ir I	3	-	-	Ab	3618.18	Tb	8	3	-	Ed
3623.186	Fe I	100	80	-	-	3620.54	Sn II	-	[6]	-	Mc	3618.161	Cs	-	[6]	-	Sv
3623.13	Eu	3 d	2	-	-	3620.472	V	10	50	-	-	3618.129	Ce	2	-	-	-
3623.13	W	-	5	-	-	3620.471	Fe	15	2	-	-	3618.082	Pr	15	3	-	-
3623.10	P	-	[15]	-	Gu	3620.461	Gd	25	25	-	-	3618.07	Dy	6	-	-	m
3623.096	Ti	12	1	-	-	3620.456	Rh I	20	10	-	-	3618.006	Co I	2	-	-	-
3623.055	U	12	15	-	-	3620.429	Co I	5	-	-	-	3617.88	Re	12 w	-	-	-
3623.035	Th	3	1	-	-	3620.426	Pr	5	2	-	-	3617.88	Tb	8	8	-	Ed
3622.850	Mo	-	20	-	-	3620.372	Th	6	6	-	-	3617.82	Er	12	5	-	-
3622.807	Gd	20	20	-	-	3620.352	Cu I	30	5	-	-	3617.811	Ce	2	-	-	-
3622.796	Th	4 d	1 d	-	-	3620.328	Ce	5	-	-	-	3617.788	Fe	125	80	-	S
3622.787	Ir	2	-	-	-	3620.31	Lu	4	-	-	Me	3617.732	Th	2	1	-	-
3622.737	Pr	7	2	-	-	3620.29	Tb	15	-	-	Ed	3617.713	Cb	3	15	-	-
3622.717	Th	2 d	2 d	-	-	3620.285	Ru I	2	5	-	-	3617.685	Hf	4	3	-	-
3622.700	U	15	1	-	-	3620.241	Os	15	12	-	-	3617.554	Mo	-	20	-	-
3622.691	Cs	-	[6]	-	Sv	3620.23	Au	-	10	-	-	3617.55	Te	-	-	[25]	Bl
3622.69	Cl	-	[8]	-	Bl	3620.228	Fe I	4	1	-	-	3617.521	W	35	20	-	-
3622.68	S	-	[3]	-	Hn	3620.177	Er	50	3	-	-	3617.487	U	3	1	-	-
3622.646	Sm	2	-	-	-	3620.176	Dy	80	20	-	-	3617.41	Cs I	60	-	-	Bv
3622.632	V I	35	1	-	-	3620.1	bh La	6 h	-	-	Me	3617.318	Fe	25	15	-	-
3622.613	Cb	4	1	-	-	3620.095	Sm II	3	3	-	-	3617.317	Ta	7	-	-	-
3622.6	bh La	6 h	-	-	Me	3620.085	U	15	2 h	-	-	3617.307	Cr	-	6	-	-
3622.558	Eu	20 h	50	-	-	3620.08	Sn II	-	[2]	-	Mc	3617.247	Re I	15	-	-	-
3622.506	Sm II	10	4	-	-	3620.041	Hf	8	-	-	-	3617.24	Dy	6	2	-	Ed
3622.501	Ir	3	-	-	Ab	3620.017	Ti I	10	-	-	-	3617.213	Ti I	8	1	-	-
3622.493	Cb	-	5 h	-	-	3619.981	Er	9	1	-	-	3617.212	Ir I	50	15	-	-
3622.46	Hf II	2	5	-	Me	3619.97	Tm	20	20	-	Me	3617.183	Er	7	-	-	-
3622.439	Ce	8	1	-	-	3619.966	Hf	3	-	-	-	3617.119	Th	5 d	4 d	-	-
3622.384	Pr	25	5	-	-	3619.96	Dy	25	5	-	Ed	3617.101	Ce	4	-	-	-
3622.339	Th	8	4	-	-	3619.924	Ce	8	1	-	-	3617.095	Fe	1	-	-	-
3622.290	U	1	3	-	-	3619.809	Yb	30	100	-	-	3617.09	P	-	-	[100 w]	Gu
3622.289	V	-	30	-	-	3619.806	U	-	3	-	-	3617.080	Re I	50	-	-	-
3622.20	Ti	-	10	-	-	3619.772	Fe I	3	1	-	-	3617.019	Th	4 d	3 d	-	-
3622.19	Yt	2	1	-	Me	3619.77	Ag	-	7 h	-	Fn	3617.016	Ce	2	-	-	-
3622.157	Er	4	-	-	-	3619.73	Tb	15	8	-	Ed	3617.004	Ag	1	2 h	-	-
3622.15	A	-	[15]	-	Rt	3619.727	Cb	3	300	-	-	3616.951	Ru I	2	4	-	-
3622.145	Ce	15	5	-	-	3619.711	Th	4	4	-	-	3616.916	S II	-	-	[60]	Hn
3622.11	Tb	30	3	-	Ed	3619.590	Pr	8	2	-	-	3616.892	Hf	25	10	-	-
3622.005	Fe I	125	100	-	-	3619.513	Cb	5	200	-	-	3616.888	U	8	-	-	-
3622.0	bh La	4 h	-	-	Me	3619.49	Ti II	-	[6]	-	El	3616.878	Ce	3	-	-	-
3621.98	Xe II	-	[2 h]	-	Hu	3619.47	Dy	3	1	-	Ed	3616.84	Mo	15	15	-	-
3621.903	Eu	8	10	-	-	3619.464	Ti I	2	2	-	-	3616.757	U	2	10	-	-
3621.887	Ir I	4	-	-	Ab	3619.460	Cr	30	8	-	-	3616.723	V	30	30	-	-
3621.86	Yt	2	1	-	Me	3619.431	Os	60	25	-	-	3616.701	Th	4	3	-	-
3621.783	U	1	2	-	-	3619.43	Ho	6	6	-	Ex	3616.676	Pr	20	8	-	-
3621.77	La II	5	8	-	-	3619.4	bh La	4 h	-	-	Me	3616.675	U	2	1	-	-
3621.715	Fe	6	5	-	-	3619.395	Zr I	3	-	-	-	3616.642	Ce	2	-	-	-
3621.656	Pt I	4	1	-	-	3619.392	Ni I	2000 R	150 h	-	-	3616.58	Tb	8	8	-	Ed
3621.618	Mo	4	3	-	-	3619.391	Ce	8	-	-	-	3616.574	Os I	150	20	-	-
3621.465	Re I	30	-	-	-	3619.390	Th	2	1	-	-	3616.573	Er	30	20	-	-
3621.463	Fe I	125	100	-	S	3619.390	Fe	12	1	-	-	3616.572	Fe I	30	7	-	-
3621.435	Ce	2	-	-	-	3619.37	Bi	5	-	-	To	3616.56	Ho	6	6	-	Ex
3621.39	Tb	8	3	-	Ed	3619.288	Sm	2	2	-	-	3616.51	Eu	10 d	-	-	-
3621.273	Fe II	-	1	-	-	3619.284	Mn	75	50	-	-	3616.498	Cb	2	2	-	-
3621.245	Cu I	20	5	-	-	3619.272	W	10	10	-	-	3616.458	Ce	4	-	-	-
3621.216	Sm II	60	10	-	-	3619.202	Ru I	2	9	-	-	3616.400	W	4	3	-	-
3621.208	V	15	80	-	-	3619.200	Cb	2	1	-	-	3616.35	Dy	3	1	-	-
3621.2	bh La	4 h	-	-	Me	3619.163	Ir I	30	3	-	-	3616.332	U	12	2 h	-	-
3621.181	Pr	9	1	-	-	3619.134	U	5	2	-	-	3616.325	Nd	15	1 h	-	-
3621.179	Co II	15	50 h	-	-	3619.098	Pr	9	3	-	-	3616.324	Fe I	4	1	-	-
3621.146	Ce	8	-	-	-	3618.969	Nd	20	15	-	-	3616.317	Zr	5	-	-	-
3621.121	Th	10	10	-	-	3618.968	Ce	2	-	-	-	3616.307	Ce	2	-	-	-

3616.3—3609.3 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3616.3	bh La	3 h	-	Me	3613.76	Eu	2 h	1 wh	-	3611.84	A II	-	[5]	Rt
3616.209	Cb	5	5	-	3613.756	Ti	12	-	-	3611.77	Te	-	[5]	Bl
3616.204	Ce	5	1	-	3613.748	U	4	-	-	3611.733	Ce	5	-	-
3616.154	Eu	40	10	-	3613.702	Zr I	9	-	-	3611.701	Co I	25	-	-
3616.145	Fe	7	-	-	3613.701	Ce I, II	18	5	-	3611.650	Ce	20 w	2 w	-
3616.112	Ce	2	1	-	3613.70	Pr	6 dh	2 wh	-	3611.58	V	-	15 wh	-
3616.085	Dy	3	1	-	3613.68	Tb	15	3	Ed	3611.580	Eu	40	5	-
3616.071	Er	10	-	-	3613.669	Cr	10	8	-	3611.52	Cs I	200	-	Bv
3616.055	Pr	5	2 h	-	3613.642	Mo	3	4	-	3611.41	Tb	8	8	Ed
3616.026	Ta	2	1	-	3613.641	He I	-	[30]	IMr	3611.4	bh La	4 d	-	Me
3615.88	N II	-	[2]	Fl	3613.609	Fe	3	-	-	3611.394	U	12	1	-
3615.877	I II	-	[5]	Ke	3613.607	Hg	-	[40]	St	3611.338	Ce II	10	-	-
3615.840	U	4	-	-	3613.595	Sm	3	2	-	3611.332	Eu	10 h	-	-
3615.817	Nd	20	10	-	3613.549	W	-	6	-	3611.33	Tb	50	8	Ed
3615.8	Bi II	-	[5]	Ml	3613.521	Sm	2	2	-	3611.307	Yb	12	50	-
3615.740	Mo	5	6	-	3613.452	Cb	5	3	-	3611.285	Cb	3	5 h	-
3615.665	Fe I	10	2	-	3613.452	Fe	10	2	-	3611.239	U	5	10	-
3615.66	Tb	50	15	Ed	3613.451	Zr II	7	1	-	3611.16	Dy	3	1	m
3615.645	Cr I	30	10	-	3613.435	Ti I	8	-	-	3611.159	Pr	5	2	-
3615.64	Mg II	2	-	Fl	3613.403	U	4	3 h	-	3611.132	Ta	25	1	-
3615.625	Ce	10	-	-	3613.400	Gd	8	6	-	3611.103	La II	-	3	-
3615.56	U	10	-	m	3613.374	Mo	5	5	-	3611.1	bh La	6 h	-	Me
3615.540	W	6	5	-	3613.33	Ho	6	8	Ex	3611.056	Sm	4	2	-
3615.498	Cb	30	30	-	3613.329	Os	30	12	-	3611.049	Gd	5	5 h	-
3615.475	Kr I	-	[20]	I	3613.244	Nd	10	4	-	3611.047	Yt II	40	60	-
3615.392	Co I	8	-	-	3613.239	Cb	2	5	-	3611.02	Eu	10 w	1	Kn
3615.35	Fe	9	-	-	3613.183	Cr	5	8	-	3611.002	Ba	10	3	Sz
3615.33	Ti	-	10	-	3613.152	U	3	2	-	3611.001	U	2 h	2	-
3615.244	Sm II	40	2	-	3613.148	Fe I	6	2	-	3610.914	Ce	10	-	-
3615.236	U	1	5	-	3613.100	Zr II	40	40	-	3610.909	Pt	4	1	-
3615.201	Fe	10	1	-	3613.096	Er	7	-	-	3610.809	Cu I	25	6	-
3615.159	Pr	40	4	-	3613.077	La I	12	3	-	3610.794	Th	8	4	-
3615.15	Mo	4	5	-	3613.06	Dy	6	4	Ed	3610.77	Dy	4	2	Ed
3615.133	Th	10	10	-	3613.06	Xe I	-	[8]	Me	3610.766	Gd	25	6	-
3615.097	Yb	3	-	-	3613.06	Tb	15	3	Ed	3610.764	Cb	3	5	-
3615.090	Zr I	3	-	-	3613.03	S II	-	[12]	Hn	3610.702	Fe I	10	3	-
3615.07	Cl II	-	[2]	Mu	3613.013	Cb	2	2	Me	3610.69	U	3 d	12 d	-
3615.045	Hf	4	1	-	3612.945	Fe I	20	4	-	3610.684	Pr	3	2	-
3615.039	Ce	2	-	-	3612.90	Te	-	[5]	Bl	3610.619	Mo	3	5	-
3615.007	U	3	5	-	3612.875	Cd I	800	500	IMe	3610.598	Ta	-	15	-
3615.0	Rn	-	[30]	Pe	3612.87	Er	10 w	2 h	-	3610.572	Eu	-	2 h	-
3614.989	Cs	-	[4]	Sv	3612.869	Th	5	1	-	3610.510	Cd I	1000	500	IMe
3614.873	Fe II	-	2	-	3612.86	Cl	-	[10]	Bl	3610.508	In	-	18	-
3614.86	Eu	-	2	-	3612.86	In	-	15	-	3610.50	Se II	-	[35]	Bl
3614.801	W	6	2	-	3612.838	Ce	3	-	-	3610.493	Re	40	-	-
3614.8	bh La	5 h	-	Me	3612.824	Ti I	4	-	-	3610.487	U	4	8	-
3614.775	Rh I	15	10	-	3612.82	Ta	3 W	-	Ks	3610.462	Ni I	1000 r	-	-
3614.774	Zr II	40	80	-	3612.788	Dy	25	10	-	3610.446	Ce	2	-	-
3614.743	Sm	4	1	-	3612.784	Yt	2	-	-	3610.399	Th	8	4	-
3614.715	Fe	6	1 h	-	3612.77	Ca	-	3	Ad	3610.32	Xe I	-	[15]	Me
3614.707	Dy	15	5	-	3612.741	Ni I	400	50 h	-	3610.299	Mn	60	40	-
3614.70	Eu	3	-	-	3612.715	Pr	10	2	-	3610.257	Ce	5	-	-
3614.686	Mo	1	20	-	3612.669	U	6	8	-	3610.245	La	7	5	-
3614.637	Er	12	1	-	3612.654	Cb	3	4	-	3610.162	Fe I	100	90	-
3614.63	Tb	30	8	Ed	3612.61	Rn	-	[20]	Rc	3610.156	Ti I	100	70	-
3614.561	Fe	15	6	-	3612.609	Cr	35	25	-	3610.052	Cr	20	8	-
3614.511	Rh	4	2	-	3612.572	Zr I	3	-	-	3610.039	Th	3	1	-
3614.454	Ir	2	2 h	-	3612.562	Er	4 h	-	-	3610.02	Cl	-	[4]	Bl
3614.450	Cd I	60	100	-	3612.503	Fe	3	1	-	3610.003	Cb	3	5	-
3614.41	Gd	3	-	m	3612.470	Rh I	200	50	-	3609.94	Eu	3 w	-	Kn
3614.4	bh La	4 h	-	Me	3612.467	Al	-	80 h	-	3609.931	Ta	1 h	18	-
3614.362	Ce	3	-	-	3612.466	Ce	6	-	-	3609.894	Ce	2	-	-
3614.255	W	5	2	-	3612.454	Mo	6	6	-	3609.88	Tb	8	-	Ed
3614.253	Mo	50 d	30	-	3612.44	Nd	6	20	-	3609.788	Nd	15	10	-
3614.233	Ce	3	-	-	3612.431	Sm	2	2	-	3609.772	Ir	30	25	-
3614.218	Cu I	50	6	-	3612.427	Th	8	4	-	3609.758	Co	5	3	-
3614.207	Ti	35	4	-	3612.398	Er	8	-	-	3609.74	Cl II	-	[2]	Mu
3614.2	bh La	3 h	-	Me	3612.37	Xe II	-	[10]	Hu	3609.687	Ce	40	10	-
3614.116	Fe	10	3	-	3612.37	Ta	2	-	Ks	3609.682	U	15	12	-
3614.084	Eu	2 d	2 d	-	3612.35	Ne II	-	[7]	Bl	3609.64	Zr	3	-	Ks
3614.083	Dy	30	10	-	3612.34	Yt	2	-	Me	3609.591	Ti I	12	2	-
3614.029	Ce	5	1	-	3612.334	La II	8	15 h	-	3609.55	Tb	15	-	Ed
3614.011	Th	6	8	-	3612.332	Zr II	1	2	-	3609.548	Pd I	1000 R	700 R	-
3614.00	Au	-	20	-	3612.322	Ce	8 s	1	-	3609.54	Tm	15	25	Me
3613.997	U	-	2	-	3612.31	Tb	8	-	Ed	3609.495	Nd	25	30	-
3613.939	Rh I	2	-	-	3612.251	Ti	15	1	-	3609.493	Mo	5	10	-
3613.902	Sm	2	-	-	3612.20	Mo	-	20	-	3609.484	Sm II	60	100	-
3613.836	Sc II	40	70	-	3612.19	Eu	6 w	2	-	3609.479	Cr	20	12	-
3613.817	Bi	-	30	Om	3612.108	Th	2	1	-	3609.447	Th	12	10	-
3613.81	I	-	[10 h]	Bl	3612.074	Fe I	80	50	-	3609.44	Er	6 d	1 h	-
3613.80	Mg II	4	-	Fl	3611.998	Mo	8	5	-	3609.360	Cb	1	5	-
3613.8	bh La	3 h	-	Me	3611.942	Pr	15	7	-	3609.357	Ta	8	1	-
3613.790	W II	10	30	-	3611.90	Dy	2	1	m	3609.314	Ni I	200	15	-
3613.779	Th	5	3	-	3611.893	Zr II	15	40	-	3609.307	Cu I	25	5	-
3613.761	Cu I	60	7	-	3611.855	W	-	20	-	3609.30	Ca	3	2 h	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3609.289	V I	30 W	30 W	-	-	3606.716	Th	1	2	-	-	3604.470	Co	3	-	-	-
3609.250	Dy	3	1	-	-	3606.71	Eu	50	-	Kn	-	3604.396	U	1	6	-	-
3609.23	La II	2	3	-	-	3606.689	V I	80	70	-	-	3604.396	Re	15 w	-	-	-
3609.228	Th	5	4	-	-	3606.682	Fe I	200	150	-	-	3604.380	Fe	10	1	-	-
3609.212	Ce	2	-	-	-	3606.68	W	-	4	-	-	3604.377	V	-	50 h	-	-
3609.179	Ne I	-	[50]	-	IHu	3606.674	Mo	8	20	-	-	3604.36	Dy	3	1	-	Ed
3609.177	Ta	8	-	-	-	3606.66	Br	-	[15]	Bl	-	3604.315	Ir I	5	-	-	-
3609.147	Os	20	12	-	-	3606.624	Sc	4	-	-	-	3604.284	Ti I	20	6	-	-
3609.107	Ru I	3	4	-	-	3606.558	Re	3 w	-	-	-	3604.276	Sm II	6	20	-	-
3609.09	N II	-	[5]	-	Fl	3606.522	A I	-	[1000]	IHu	-	3604.27	Fe	5	-	-	-
3609.06	Tb	8	-	-	Ed	3606.487	Cb	3 h	5	-	-	3604.224	U	1	6	-	-
3608.96	U	18	10	-	-	3606.47	Yb	15	60	-	-	3604.197	Ce	8	1	-	-
3608.89	F II	-	[6]	-	Di	3606.432	La II	2	3 h	-	-	3604.16	W	-	3	-	-
3608.871	K II	-	[10]	-	Dm	3606.401	Nd	12	2	-	-	3604.15	Tb	8	-	-	Ed
3608.861	Fe I	500	400	-	S	3606.382	U	5	-	-	-	3604.101	Ce	3	1	-	-
3608.847	Ce	2	-	-	-	3606.35	Cb	-	3 h	Me	-	3604.09	Hg II	-	[50]	-	Ps
3608.781	Ta	15 r	1 d	-	-	3606.338	W	10	8	-	-	3604.075	Cb	3 W	2 W	-	-
3608.77	Tm	100	20	-	Me	3606.329	Sm	2	1	-	-	3604.074	Mo	6	15	-	-
3608.758	Gd	100	125	-	-	3606.324	U	8	12	-	-	3604.046	Th	4	4	-	-
3608.727	Ru I	2	8	-	-	3606.295	Mo	1	10	-	-	3604.04	Nd	-	6	-	-
3608.72	Eu	10	1 h	-	Kn	3606.285	Nd	12	4	-	-	3604.0	bh Ca	4	-	-	L
3608.686	U	-	-	-	-	3606.271	Cb	2	5 wh	-	-	3603.957	Cb	2	5	-	-
3608.494	Mn	60	40	-	-	3606.21	Eu	2 h	1 h	-	-	3603.949	Fe	2	-	-	-
3608.468	Pr	10	3	-	-	3606.204	Th	-	5 h	-	-	3603.91	A	-	[3]	-	Rt
3608.401	Cr	12	8	-	-	3606.153	Ru	2	1	-	-	3603.910	W	5	5	-	-
3608.379	Th	4	1 d	-	-	3606.130	Ce	5	-	-	-	3603.845	Ti I	15	2	-	-
3608.37	W	-	10	-	-	3606.126	Dy	200	100	-	-	3603.823	Fe I	20	12	-	-
3608.369	Mo	15	15	-	-	3606.12	Tb	30	15 d	Ed	-	3603.745	Cr I	15	50	-	-
3608.354	U	3	2 h	-	-	3606.116	U	1	6	-	-	3603.733	Ce	5	-	-	-
3608.354	Ir I	6	2	-	-	3606.09	Ho	-	4	Ex	-	3603.732	Pr	2	1	-	-
3608.313	Cb	3	3	-	-	3606.08	Er	15 d	4	-	-	3603.724	Mo	4	5	-	-
3608.309	Ce	2	-	-	-	3606.067	W	12	10	-	-	3603.72	F II	-	[20]	-	Di
3608.307	Co I	2 h	-	-	-	3606.062	Ti I	12	1	-	-	3603.67	U	5 d	-	-	-
3608.285	Cs	-	[10]	-	Sv	3605.962	Pr	10	3	-	-	3603.65	I	-	[3]	-	Bl
3608.25	Tb	15	-	-	Ed	3605.908	Fe	3	1	-	-	3603.624	Th	4	2	-	-
3608.22	Er	10	-	-	-	3605.899	Zr I	3	-	-	-	3603.597	Al	-	[2]	-	Sy
3608.16	La II	2	6	-	-	3605.89	A II	-	[15]	Rt	-	3603.592	Mo	3	4	-	-
3608.150	Fe I	15	25	-	-	3605.863	Rh I	25	30	-	-	3603.572	Fe	1	-	-	-
3608.146	U	2	1	-	-	3605.823	U	8	8	-	-	3603.53	Sb	2	25 whl	-	-
3608.1	bh La	3 h	-	-	Me	3605.80	Hg II	-	[200]	Ps	-	3603.504	Sm	1	4	-	-
3608.086	Rh I	10	3	-	-	3605.783	Ce	5	-	-	-	3603.476	Ce	5	-	-	-
3608.06	Dy	4	2	m	-	3605.748	U	1	4	-	-	3603.46	A	-	[3]	-	Rt
3608.014	Cb	5	5	-	-	3605.695	Er	3	-	-	-	3603.434	Cb	4	5	-	-
3608.001	U	2	4	-	-	3605.691	Mn	10	-	-	-	3603.40	Ba I	2	-	-	-
3607.907	Th	1	2	-	-	3605.657	Th	8	6	-	-	3603.363	U	10	1 h	-	-
3607.89	Pt II	-	5	-	Sh	3605.641	Ru	2	9	-	-	3603.363	Th	5	5	-	-
3607.88	Kr II	-	[100 whl]	-	Me	3605.62	Gd	20	15	m	-	3603.358	Ce II	6	-	-	-
3607.874	Ce	3 w	-	-	-	3605.61	Eu	4 w	-	Kn	-	3603.208	Th	8	8	-	-
3607.86	Tb	8	-	-	Ed	3605.6	Rn	-	[10]	Pe	-	3603.208	Fe I	150	80	-	-
3607.820	Pr	5	3	-	-	3605.589	V	30	20 h	-	-	3603.20	Eu	100 w	50	-	Kn
3607.8	bh La	5 h	-	-	Me	3605.535	Cs	-	[4]	Sv	-	3603.15	Dy	3	1	-	Ed
3607.776	U	1	3	-	-	3605.48	U	1	4	-	-	3603.13	U	4 hd	-	-	-
3607.722	Nd	10	6	-	-	3605.46	Yt II	2 h	6 h	-	-	3602.97	W	1	5	-	-
3607.635	Sm	3	-	-	-	3605.458	Fe I	300	150	-	-	3602.943	V	10	12	-	-
3607.625	Ce	15	8	-	-	3605.356	Co I	60	-	-	-	3602.941	Mo	20	25	-	-
3607.60	Hg	-	[18]	-	Ps	3605.338	Eu	3	1 h	-	-	3602.93	Tb	15	-	-	Ed
3607.54	Tb	8	-	-	Ed	3605.333	Cr I	500 R	400 R	-	-	3602.88	In	-	3	-	Sq
3607.54	Au	-	20	-	-	3605.276	U	8	-	-	-	3602.875	Cb	2	8	-	-
3607.537	Mn	75	40	-	-	3605.249	Gd	15	15	-	-	3602.852	Cs	-	-	-	Sv
3607.522	U	-	2	-	-	3605.211	Fe I	12	2	-	-	3602.85	F	-	[60 d]	-	Di
3607.511	I	-	[18]	-	Ke	3605.21	Ca	2	2 r	-	-	3602.82	Dy	10	4	-	Ed
3607.431	Er	8	-	-	-	3605.09	Dy	4	2	m	-	3602.803	Ce	2	1	-	-
3607.412	Mo	4	4	-	-	3605.054	Pr	20	10	-	-	3602.780	Zr I	5 h	2 h	-	-
3607.41	Xe II	-	[5]	-	Hu	3605.018	Mo	2	5	-	-	3602.574	Cr I	15	10	-	-
3607.406	Ta	70	35	-	-	3605.015	Co I	15	-	-	-	3602.562	Cb	30	30	-	-
3607.395	Th	3	4	-	-	3604.987	Sm	3	1	-	-	3602.55	Ho	-	4 h	-	Ex
3607.376	Zr II	8	9	-	-	3604.983	Ta	7	1 h	-	-	3602.529	Fe I	50	30	-	-
3607.36	Tm	8	10	-	Me	3604.928	Ce	6	1	-	-	3602.51	Tb	15	3	-	Ed
3607.327	Cb	2	5	-	-	3604.901	Er	12	4	-	-	3602.51	U	12 d	1 d	-	-
3607.32	F II	-	[6]	-	Di	3604.90	Tb	3	15	Ed	-	3602.50	I II	-	[2]	-	Mu
3607.229	Re	3	-	-	-	3604.884	Gd	50	12	-	-	3602.50	Eu	6 w	1	-	-
3607.225	Pr	10	2	-	-	3604.85	Dy	4 w	2	m	-	3602.484	Os	15	10	-	-
3607.131	Ti I	25	5	-	-	3604.715	Er	9	2	-	-	3602.470	Mo	2	3	-	-
3607.124	Ir I	3	-	-	-	3604.712	Sm	2	-	-	-	3602.466	Fe	10	5	-	-
3607.1	bh Sr	4	-	-	L	3604.697	Ce	3	1	-	-	3602.464	Th	4	1	-	-
3607.066	W	10	12	-	-	3604.689	Mn	12	-	-	-	3602.462	W	-	12	-	-
3607.066	Gd	15	20	-	-	3604.684	Eu	7	1 h	-	-	3602.281	Ni I	150	15	-	-
3607.015	Cb	1	10	-	-	3604.680	Th	5	1	-	-	3602.12	Kr II	-	[2 h]	-	Me
3606.946	U	3	1	-	-	3604.655	Ce	3	-	-	-	3602.10	Cl	-	[12]	-	Bl
3606.92	Hg	-	[30]	-	Ps	3604.641	Cb	5 w	10 w	-	-	3602.085	Fe I	20	5	-	-
3606.908	Mo	-	30	-	-	3604.6	Rb	-	[2]	Dr	-	3602.084	Co I	200	35	-	-
3606.852	Ni I	100 r	-	-	-	3604.564	Mo	5	-	-	-	3602.08	Ca	-	3	-	-
3606.806	Cb	3	1	-	Me	3604.521	Ce	2	1	-	-	3602.064	Ir I	3	-	-	Ab
3606.80	F II	-	[10]	-	Di	3604.5	bh La	5 h	-	-	-	3602.032	Cu I, II	50	25 W	-	-
3606.786	Ti I	12	4	-	-	3604.475	Os	15	100	-	-	3601.984	Th	2	2	-	-

3601.9—3593.9 A.

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
3601.984	Sm	2	1	-	3599.508	Er	18	5	-	3596.725	Ce II	10	1	-
3601.921	Yt II	18	60	-	3599.49	Ho	-	4	Ex	3596.661	Pd	5	1	-
3601.916	Pr	3	-	-	3599.442	He I	-	[2]	Pa	3596.65	La II	2	3	Me
3601.87	Ho	6	-	Ex	3599.420	Ba I	10	3	m	3596.645	Sm	4	2	-
3601.84	Mo	1	3	-	3599.400	Ru I	2	3	-	3596.608	W	5	4	-
3601.833	Os	60	20	-	3599.395	Cr	30	20	-	3596.57	Ba II	1	4	Ra
3601.8	Pb II	-	[20]	Ea	3599.360	Th	3	4	-	3596.55	Ti II	3	2	-
3601.798	W	5	4	-	3599.349	U	4	10	-	3596.514	Co I	5	-	-
3601.75	Tb	15	3	Ed	3599.304	He I	-	[5]	Pa	3596.491	Dy	3	1	-
3601.74	Al	-	15	Gn	3599.278	Cb	15	15	-	3596.433	W	5	4	-
3601.73	Eu	2 w	-	-	3599.21	Kr II	-	[25 h]	Me	3596.417	Ir I	3	-	-
3601.695	Sm II	5	5	-	3599.16	Tm	4	8	Me	3596.390	Re I	25	-	-
3601.666	Cr I	50	30	-	3599.146	Fe	10	5	-	3596.38	Tb	50	15	Ed
3601.6	Rn	-	[5]	Wo	3599.140	Cu I	60	30	-	3596.351	Mo	-	30	-
3601.578	W	-	6	-	3599.139	Hf II	4	10	-	3596.34	Lu	6	-	Me
3601.51	A II	-	[5]	Rt	3599.070	Nd	10	-	-	3596.33	Ba I	2	-	Sd
3601.50	Tb	8	-	Ed	3598.984	Fe	3	1	-	3596.23	Er	2 d	-	-
3601.485	Ru	2	5	-	3598.97	Cs	-	[4]	Bs	3596.23	Eu	3 W	1 h	Kn
3601.42	U	-	3	-	3598.96	Tb	8	3	Ed	3596.222	Re I	20 h	-	-
3601.403	Ir I	30	8	-	3598.946	U	8	3	-	3596.198	Fe	15	5	-
3601.403	F	-	[30]	Di	3598.927	La II	-	3 hl	-	3596.194	Rh I	200	50	-
3601.39	Dy	3	1 h	m	3598.914	Pr	8	2	-	3596.193	Pr	25	8	-
3601.376	Ti	15	-	-	3598.9	bh Zr	2	-	L	3596.18	W	-	15	-
3601.321	Nd	10	2	-	3598.881	Mo	10	15	-	3596.179	Ru I	30	100	-
3601.268	Mn	15	15 h	-	3598.878	W	10	7	-	3596.115	Ce	12	2	-
3601.252	Sm	4	1	-	3598.85	Er	4 hs	1	-	3596.11	Ho	-	4 h	Ex
3601.193	Ti I	7	3	-	3598.77	Ho	40	30	Ex	3596.110	Bi I	150 wh	50	-
3601.193	Zr I	400	15	-	3598.769	Re	20	-	-	3596.067	Dy	50	20	-
3601.054	La II	5	15	-	3598.763	Ir I	25	5	-	3596.052	Ti II	50	125	-
3601.040	Th	8	10	-	3598.74	Sn	-	3 wh	-	3596.016	Rh	25	5	-
3601.023	Pr	10	2	-	3598.721	Fe	6	2	-	3595.991	S II	-	[50]	Hn
3601.966	Gd	30	30	-	3598.718	V	-	10	-	3595.945	U	1	3	-
3600.955	W	-	9	-	3598.716	Ti I	70	30	-	3595.917	F	-	[15]	Di
3600.95	Ho	6	10	Ex	3598.704	F	-	[30]	Di	3595.91	Rb II	-	[2]	Ok
3600.915	Nd	20	10	-	3598.57	Eu	2	1	-	3595.857	Fe	4	1	-
3600.826	Th	3	1	-	3598.43	W	-	12	-	3595.838	Er	7	-	-
3600.809	Co I	4	-	-	3598.352	Cb	5 d	2 h	-	3595.794	Os	1	5	-
3600.80	Tb	8	-	Ed	3598.265	Dy	10	5 h	Ed	3595.753	U	5	-	-
3600.769	I	-	[5]	Ke	3598.196	Ce I, II	20	1	-	3595.706	Mo	3	4	-
3600.756	Yb	10	20	-	3598.124	Th	6	4	-	3595.638	Ta	70	5	-
3600.754	Rh I	8	2	-	3598.114	Eu	2 h	-	-	3595.623	Th	3	1	-
3600.750	Pr	25	5	-	3598.111	Os I	300	30	-	3595.551	Mo	8	5	-
3600.742	Er	30 w	20 w	-	3598.08	Au I	35	10	MI	3595.526	U	2	3 h	-
3600.737	Mo	2	4	-	3598.06	Tb	15	8	Ed	3595.491	Ir	3	-	Ab
3600.734	Yt II	100	300	-	3598.040	U	2	-	-	3595.47	Er	7 d	1	-
3600.73	Cs	-	[10]	Sv	3598.026	Nd	10	6	-	3595.40	Mo	-	10	-
3600.73	Ho	6	-	Ex	3598.014	Cu I	40 wh	-	-	3595.386	W	8	6	-
3600.701	Ta	2	1 h	-	3597.961	W	5	4	-	3595.323	Th	3 d	3 d	-
3600.678	Rb	-	[20]	Rr	3597.943	Dy	3	2	-	3595.308	Fe I	20	7	-
3600.583	Ce I, II	15	2	-	3597.928	Sm	2	4	-	3595.241	U	5	-	-
3600.494	U	1	2	-	3597.892	Rh	6	3	-	3595.166	Re	20 h	-	-
3600.44	Tb	8	50	Ed	3597.80	Tb	8	-	Ed	3595.119	Mn	50	25	-
3600.434	Th	4	1	-	3597.773	Er	6	-	-	3595.07	W	-	5	-
3600.39	Yb	2	2	-	3597.759	U	12	6	-	3595.046	Dy	200	100	-
3600.34	Dy	20	30	Ed	3597.73	Cs	-	[6]	Sv	3595.042	Er	18	8	-
3600.293	U	10	-	-	3597.714	W	7	6	-	3595.00	Ho	-	4	Ex
3600.287	W	4	3	-	3597.705	Ni I	1000 r	50 h	-	3594.99	Sm	6 d	-	Kn
3600.284	Mo	5	5	-	3597.638	U	-	2	-	3594.98	Tb	15	-	Ed
3600.22	A II	-	[3]	Rt	3597.519	Os	15	10	-	3594.954	U	8	15	-
3600.209	I	-	[10]	Ke	3597.514	Cb	3	3	Me	3594.94	Hg II	-	[2]	Ps
3600.204	Mo	3	3	-	3597.51	Sb	2	200 whl	-	3594.872	Co I	200 W	-	-
3600.169	Ne I	-	[75]	IHu	3597.510	Hf	3	-	-	3594.65	Tb	15	-	Ed
3600.118	Nd	15	10	-	3597.50	Al II	-	[5]	Sy	3594.636	Fe I	125	100	-
3600.08	S	-	[3]	Hn	3597.498	Th	3	1	-	3594.6	air	-	3	m
3600.055	Hf II	2	8 h	-	3597.430	Cs	-	[10]	Sv	3594.57	Dy	4	2	m
3600.04	Tb	15	3	Ed	3597.430	Zr I	3	1	-	3594.550	Mo	3	4	-
3600.030	V I	50	40	-	3597.42	Hf II	5	15	Me	3594.531	W	5	7	-
3599.974	Ce	10	1	-	3597.400	V	-	5	Me	3594.462	S II	-	[35]	Hn
3599.974	Fe	5	-	-	3597.372	Mo	2	3	Pu	3594.427	Hf II	-	2	-
3599.94	Bi	2	-	To	3597.263	W	10	9	-	3594.391	Ir	15	30	-
3599.901	Zr II	5	5	-	3597.255	Cb	8	10	-	3594.308	Cr	-	4	-
3599.90	Kr II	-	[40 hl]	Me	3597.245	U	-	2	-	3594.25	Tb	15	8	Ed
3599.88	S	-	[5]	Bi	3597.232	Ce	5	-	-	3594.18	Ne II	-	[12]	Bn
3599.870	Hf	10	8	-	3597.147	Rh I	200	100	-	3594.15	Au	25	6	-
3599.844	U	6	18	-	3597.132	U	-	2	-	3594.137	Ir I	10	4	-
3599.829	Mo	3	5	-	3597.064	Sm	-	3	-	3594.128	Er	9	-	-
3599.829	Er	30 w	20 s	-	3597.061	Fe	40	10	-	3594.12	Ca I	3	2	-
3599.81	Ho	-	4	Ex	3597.0	Rn	-	[5]	Po	3594.116	Th	5	2	-
3599.764	Ru	12	100	-	3596.96	Sb	-	[100]	Lg	3594.111	U	1	4	-
3599.731	Th	3	1	-	3596.884	U	6	8	-	3594.096	Ce	5	2	-
3599.67	A I	-	[20]	Ms	3596.861	Ta	7	1	-	3594.032	Ce	5	-	-
3599.633	Cb	10	10	-	3596.86	Eu	3 w	2 h	Kn	3594.023	Cu I	15	2	-
3599.623	Fe	40	30	-	3596.86	Kr II	-	[2 hl]	Me	3594.01	Pt	3	-	Ex
3599.62	Sb	-	4	Dv	3596.80	Tb	8	-	Ed	3593.995	Sm	2	-	-
3599.51	Pr	4 d	2 hd	-	3596.765	U	2	8	-	3593.971	W	9	8	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3593.966	Cb	80	50	-	3591.741	Sm II	-	2	-	3589.456	Fe I	50	30	-
3593.952	Er	8	-	-	3591.725	Zr I	8	-	-	3589.356	Cb	100	100	-
3593.889	Rh	3	-	-	3591.69	Mo	-	25	-	3589.345	F	-	[20]	Di
3593.881	Th	5	5	-	3591.680	Sm	2	-	-	3589.296	Sm	4	-	-
3593.75	Tb	30	8	Ed	3591.66	Tb	15	3	Ed	3589.267	Eu	3	-	Kn
3593.730	Sm II	4	2	-	3591.602	Os	2	5	-	3589.215	Ru I	60	100	-
3593.685	U	8	1	-	3591.59	Rb I	80	20	Fl	3589.109	Th	4	3	-
3593.685	Pr	4	2	-	3591.583	Ir	-	-	-	3589.108	Pd I	5	-	-
3593.640	Ne I	-	[250]	IHu	3591.560	U	4	15	-	3589.107	Fe I	70	30	S
3593.61	Tl II	-	[10]	El	3591.5	Rn	-	[2]	Pe	3589.107	Cb	50	30	-
3593.60	N II	-	[10]	Fl	3591.487	Fe	6	-	-	3588.949	Mo	10	10	-
3593.561	W	4	3	-	3591.48	Hg I	-	[3]	Wd	3588.948	Er	9	3	-
3593.547	Cb	15	3	-	3591.455	Th	4	1	-	3588.92	C II	-	2	Fl
3593.530	Rh I	10	2	-	3591.429	Gd	10	5	-	3588.914	Fe I	10	4	-
3593.526	Ne I	-	[500]	IHu	3591.423	Dy	200	100	-	3588.8	Rb	-	[6]	Dr
3593.488	Cr I	500 R	400 R	-	3591.404	Mo	4	2	-	3588.784	Zr II	2	2 h	-
3593.48	Hg	-	-	Ps	3591.39	Tb	8	3	Ed	3588.764	Er	6	1	-
3593.432	Gd	15	[15]	-	3591.345	Fe I	12	3	-	3588.62	Xe II	-	[3 h]	Hu
3593.402	Sm II	2	3	-	3591.34	Eu	10	1	-	3588.616	Fe I	35	10	-
3593.397	Re	15 W	-	-	3591.33	Ho	-	6	Ex	3588.564	Ce	2	1	-
3593.34	Te	-	[5]	Bl	3591.31	Br	-	[4]	Bl	3588.55	Eu	3	1	Kn
3593.334	V II	30	300 R	-	3591.283	Ir I	8	2	Ab	3588.539	Ca	-	3	-
3593.329	Fe I	7	2	-	3591.26	Ca I	2	2 h	Cw	3588.5	Bi II	-	[60]	MI
3593.29	La	2	-	m	3591.209	Pr	4	1	Kn	3588.496	Ce	3	-	-
3593.282	Ba I	3	-	Sz	3591.198	Cb	2	50	-	3588.44	A	-	[300]	Rt
3593.22	K II	-	[5]	Bn	3591.158	Er	7 h	-	-	3588.430	Ce	5	-	-
3593.214	Sr II	3	2	-	3591.065	Th	2	4	-	3588.348	U	3	-	-
3593.198	U	10	1	-	3591.03	Se I	-	[8]	Rd	3588.343	Er	20	-	-
3593.15	Dy	6	4	-	3591.001	Fe I	4	1	-	3588.320	Zr II	9	9	-
3593.134	Ce II	8	-	-	3590.95	Hg I	-	[4]	Wd	3588.305	Pr	7	3	-
3593.13	Eu	2 w	-	-	3590.905	Cb	3	2	-	3588.234	Ir	5	-	-
3593.13	Ho	6	6	Ex	3590.886	Ru	2	4	-	3588.16	Se II	-	[8]	Bl
3593.129	Zr I	7	1	-	3590.879	Re	15	-	-	3588.139	V	1	20	-
3593.12	Pb	-	30	Sx	3590.87	C II	-	6	Fl	3588.132	Ba	5	3	Sz
3593.1	bh Zr	2	-	L	3590.826	W	10	10 l	-	3588.130	Ce	6	1	-
3593.10	Tb	15	8	Ed	3590.77	Si	-	5	Sy	3588.11	A I	-	[3]	Ms
3593.093	Ti II	5	30	-	3590.738	Mo	10	10	-	3588.108	Eu	2	1	-
3593.036	Pr	5	2 h	-	3590.728	U	4	-	-	3588.106	Mo	-	15	-
3593.022	Ru I	60	150	-	3590.72	Er	6 d	1	-	3588.09	Fe	4	-	-
3592.979	W	5	3	-	3590.714	Cb	3	4	-	3588.02	Cb	-	3 h	Me
3592.97	Hg I	-	2 h	St	3590.667	Dy	30	20	-	3587.984	Zr II	10	10	-
3592.95	Ho	6	-	Ex	3590.62	Eu	2 h	1 h	-	3587.980	F	-	[15]	Di
3592.927	Eu	7	1 h	-	3590.598	Ce	50	1	-	3587.956	Cb	2	-	-
3592.921	Pb	-	3	-	3590.592	Fe	3	-	-	3587.931	Ni I	200	12	-
3592.913	Yt I	80	25	-	3590.519	Rh I	4	3	-	3587.873	Os	2	10	-
3592.905	Sm	4	-	-	3590.499	U	8	-	-	3587.865	Pr	8	6	-
3592.890	Fe I	3	-	-	3590.475	Sc II	18	12	-	3587.835	U	-	2	-
3592.846	W	6 d	3 d	-	3590.472	Gd	15	15	-	3587.784	U	2	-	-
3592.801	U	1	6	-	3590.47	Ne II	-	[4]	Bl	3587.76	Tb	30	-	Ed
3592.80	Xe I	-	[2]	Me	3590.46	Tb	15	-	Ed	3587.758	Fe I	50	25	-
3592.776	Th	2 d	6	-	3590.45	Eu	10 wh	-	Kn	3587.753	Yt	15	2	-
3592.696	Gd	50	70	-	3590.43	W	-	5	-	3587.748	Er	10	3	-
3592.692	Fe I	12	2	-	3590.352	Nd	400 W	300 W	-	3587.68	C II	-	6	Fl
3592.65	Mo	-	20	-	3590.351	Ce	5 wh	5 wh	-	3587.680	Ce	2	-	-
3592.595	Sm II	40	50	-	3590.35	In	-	12	m	3587.639	Ce II	10	2	-
3592.595	Nd	20	30	-	3590.35	Er	25	-	-	3587.504	Nd	8	20	-
3592.533	V	40	-	-	3590.348	Yt	2	-	-	3587.473	Sm	15	3	-
3592.495	Ta	2	1 h	-	3590.320	U	5	15	-	3587.441	Al II	-	[80]	Sy
3592.486	Fe	3	1	-	3590.306	Mo	3	2	-	3587.44	Tb	15	15	Ed
3592.48	Cs	-	[4]	Bs	3590.3	bh C	-	-	L	3587.424	Ag	3 h	-	-
3592.423	W II	9	35	-	3590.20	Mo	-	15 d	-	3587.422	Fe I	10	5	-
3592.4	Bi II	-	[5]	MI	3590.107	Os	30	15	-	3587.42	F	-	[6]	Di
3592.317	Os	20	12	-	3590.085	Fe	6	3	-	3587.406	Cb	2	4	-
3592.301	U	4	4	-	3589.97	Ta	2	-	Ks	3587.405	Pt I	4 h	-	-
3592.24	Mo	-	15	-	3589.96	Eu	2 h	1 h	-	3587.396	He I	-	[2]	Ps
3592.22	Ho	6	10	Ex	3589.959	Cb	2	3	-	3587.35	P	-	[30]	Gu
3592.209	Fe	6	-	-	3589.92	Pb I	-	40	Sx	3587.342	Pr	10	5	-
3592.14	Ta	2	1 h	-	3589.8	bh Zr	5	-	L	3587.33	Sn II	-	[3]	Mc
3592.117	Dy	80	30	-	3589.791	U	8	-	-	3587.327	Al II	-	[5 h]	Sy
3592.073	Nd	8	8	-	3589.78	Te	-	[5]	Bl	3587.315	Os	60	15	-
3592.065	U	4	3	-	3589.760	V II	80	600 R	-	3587.26	Er	3	-	-
3592.024	V II	50	300 R	-	3589.750	Zr	3	3	-	3587.252	He I	-	[10]	Ps
3592.015	Mo	5	3	-	3589.742	Sm	2 wh	-	-	3587.240	Fe	5	2	-
3591.99	Au	15	5	-	3589.708	Th	2	2	-	3587.223	Ce	5	1	-
3591.972	W	6	4	-	3589.698	W	4	3	-	3587.203	Ru	5	70	-
3591.907	Gd	8	4	-	3589.686	Yt I	3	-	-	3587.191	Gd	25	15	-
3591.884	U	6	10	-	3589.67	C II	-	20	Fl	3587.190	Co I	200 r	50 h	-
3591.821	Dy	80	20	-	3589.658	U	6	1	-	3587.176	Al II	-	[2]	Sy
3591.809	Mn	15	-	-	3589.65	Kr II	-	[70 whl]	Me	3587.15	Eu	3	1 h	Kn
3591.792	Cb	5	5	-	3589.635	Sc II	5	12	-	3587.14	Pr	8	8	-
3591.79	Eu	3	1	-	3589.609	Fe	2	-	-	3587.13	F	-	[6]	Di
3591.760	W	6	3	-	3589.52	Mo	-	30 d	-	3587.130	Ti II	12	25	-
3591.749	Co I	3	-	-	3589.5	Rn	-	[5]	Pe	3587.08	Rb I	200	40	Fl
3591.747	U	10	2	-	3589.49	Ca I	2	-	Cw	3587.079	Ce	3	2	-
3591.745	Ce	4	1	-	3589.47	Pr	4	2	-	3587.057	Al II	-	[100]	Sy

3587.0—3578.4 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3587.02	Xe I	—	—	[4]	Me	3584.404	Os	15	20	—	—	3581.238	W	8	8	—	—
3586.99	W	—	—	8	—	3584.403	V	—	6	—	—	3581.195	Fe I	1000 R	600 r	—	S
3586.986	Fe I	200	150	—	—	3584.337	Ce	6	2	—	—	3581.00	Mo	2	3	—	—
3586.981	U	—	—	2	—	3584.33	Cr	10 wh	10 wh	—	—	3580.968	Re I	40 w	—	—	—
3586.98	Ag I	6 h	—	—	—	3584.257	Pr	15	8	Kn	—	3580.927	Sc II	12	40	—	—
3586.908	Al II	—	—	[500 h]	Sy	3584.256	Mo	5	10	—	—	3580.922	U	3	—	—	—
3586.9	bh Sr	8	—	—	L	3584.255	Sm II	25 d	3	—	—	3580.906	Sm	40	6	—	—
3586.869	Cb	2	—	—	—	3584.213	Ta	50	7 h	—	—	3580.889	Ta	3	1 h	—	—
3586.861	Mo	6	—	6	—	3584.198	Ru I	2	6	—	—	3580.861	Ir I	15	3	—	Ab
3586.802	Al II	—	—	[200 wh]	Sy	3584.18	S	—	[10]	Hn	—	3580.825	V I	50	50	—	—
3586.78	Mo	—	—	5	—	3584.107	W	9	9	—	—	3580.779	Ce	10	2	—	—
3586.756	Cb	2	20	—	—	3584.09	Pd	3	—	—	—	3580.75	Ho	—	4	—	Ex
3586.753	Ca II	10	4	—	—	3584.07	Cl	—	—	[4]	Bl	3580.63	Tb	8	—	—	Ed
3586.747	Fe	4	2	—	—	3583.968	Ce	2	1	—	—	3580.629	Gd	5	—	—	—
3586.74	Au I	20	15	—	—	3583.927	U	3	6	—	—	3580.586	Sm II	2	—	—	—
3586.692	Al II	—	—	[200]	Sy	3583.920	Sm	2	1	—	—	3580.57	Eu	3	1 h	—	—
3586.691	Cb	1	20	—	—	3583.9	bh C	—	—	L	—	3580.562	Ce	2	—	—	—
3586.64	Er	8 d	—	—	—	3583.871	Mo	2	3	—	—	3580.543	Mo	5	10	—	—
3586.60	K II	—	—	[5]	Bn	3583.85	In	—	12	Sq	—	3580.530	Os	2	4	—	—
3586.546	Al II	—	—	[200]	Sy	3583.704	V I	60	30	—	—	3580.48	Er	12 d	5	—	—
3586.543	Mn	50 h	40	—	—	3583.7	bh Ca	8	—	L	—	3580.45	Hf II	2	3	—	m
3586.54	Sm	3	3	—	—	3583.692	Fe	6	1	—	—	3580.35	P	—	[30]	—	Gu
3586.531	Pr	10	4	—	—	3583.676	Mn	5	—	—	—	3580.291	Ti	15	5	—	—
3586.523	Ba	5	3	—	—	3583.664	Ce	3	—	—	—	3580.29	Mo	—	10	—	—
3586.506	Os	30	15	—	—	3583.60	P	—	[50]	Gu	—	3580.273	Cb	100	300	—	—
3586.44	Pb	—	20	Sx	—	3583.60	Ga II	—	[2]	Sy	—	3580.267	Ta	7	—	—	—
3586.359	Sm	40 r	—	—	—	3583.528	Rh I	10	5	—	—	3580.262	Rh I	10	2	—	—
3586.326	U	3	—	—	—	3583.46	W	—	10	—	—	3580.26	Lu	3	—	—	Me
3586.294	Zr I	20	3	—	—	3583.45	Pr	4	3	—	—	3580.244	U	6	1	—	—
3586.291	Ta	18	3	—	—	3583.398	Os	15	10	—	—	3580.235	Th	5	5	—	—
3586.25	Kr II	—	—	[12 hl]	Me	3583.388	Ir	6	3	—	—	3580.232	Eu	4	1 h	—	—
3586.25	Pr	2	1	—	—	3583.372	Sm II	15	4	—	—	3580.133	Re	80	—	—	—
3586.116	Dy	4	2 h	—	—	3583.341	Fe	50	15	—	—	3580.124	U	—	2	—	—
3586.114	Fe	80	80	S	—	3583.324	I	—	[18]	Ke	—	3580.102	Mn	2	—	—	—
3586.113	V I	6	—	—	—	3583.28	Hf	2	—	—	—	3580.099	La II	2	3 h	—	—
3586.07	Tm	6	—	—	Me	3583.22	Pr	5	3	—	—	3580.08	Au	20	15	—	—
3585.90	Mo	—	15	m	—	3583.218	U	—	2	—	—	3580.043	Dy	80	30	—	—
3585.86	In	—	12	Sq	—	3583.151	Mo	3	4	—	—	3580.023	Ta	10	—	—	—
3585.852	Ti	7	3	—	—	3583.107	Ce	3	—	—	—	3579.98	Tb	8	3	—	Ed
3585.832	Sm	5	4 h	—	—	3583.098	Rh I	200	125	—	—	3579.95	Pr	7	3	—	—
3585.83	C II	—	6	Fl	—	3583.091	Os	20	10	—	—	3579.948	Sm	2	1	—	—
3585.820	Ru	—	10 h	—	—	3583.022	Re I	100 w	—	—	—	3579.917	Zr	6 h	5 h	—	—
3585.808	Co I	2 h	—	—	—	3582.972	Pr	4	3	Kn	—	3579.905	Hf	15	10	—	—
3585.8	bh C	—	—	L	—	3582.913	W	4	2	—	—	3579.867	Os	2	5	—	—
3585.79	Er	10 W	2 h	—	—	3582.814	V I	40	25	—	—	3579.828	Fe I	1	—	—	—
3585.78	Tb	8	3	Ed	—	3582.704	Pr	4	2	—	—	3579.768	Ru I	3	8	—	—
3585.776	Dy	150	100	—	—	3582.72	W	—	4 d	—	—	3579.672	Ba I	10	8	—	—
3585.774	Th	4	4	—	—	3582.70	A I	—	[30]	Ms	—	3579.668	Sm	4	3	—	—
3585.71	W	—	4	—	—	3582.688	Fe	3	—	—	—	3579.661	Mn	3	—	—	—
3585.707	Fe I	125	80	—	—	3582.683	Sm II	10	—	—	—	3579.558	Fe	2	1	—	—
3585.700	Mo	—	20	—	—	3582.676	Mo	20	1	—	—	3579.550	Gd	5	5	—	—
3585.571	Mo	4	—	—	—	3582.63	Tb	8	—	Ed	—	3579.499	Sm	4	2	—	—
3585.540	Zr I	2	2 h	—	—	3582.624	Cr	35	12	—	—	3579.450	Ca	—	2	—	—
3585.523	La II	—	6 h	—	—	3582.602	Ce	3	1	—	—	3579.448	Ta	—	35	—	—
3585.506	Cr II	6	35	—	—	3582.6	Rn	—	[18]	Wo	—	3579.44	Er	15 d	—	—	—
3585.468	Yb	10	20	—	—	3582.431	Mn	10	—	Fu	—	3579.42	Dy	2	1	—	m
3585.44	Br	—	—	[6]	Bl	3582.42	Mo	—	15	—	—	3579.364	U	6	10	—	—
3585.34	Te	—	—	[350]	Bl	3582.39	Sn II	—	[3]	Mc	—	3579.36	Eu	4	1 h	—	—
3585.321	Re	30	—	—	—	3582.363	Cb	5	10	—	—	3579.343	Th	4	8	—	—
3585.320	Fe I	150	100	S	—	3582.35	A	—	[50]	Rt	—	3579.20	Tb	50	50	—	Ed
3585.295	Cr	6	5	—	—	3582.25	Pr	—	2 h	—	—	3579.127	Re I	50	—	—	—
3585.160	Co I	60	—	—	—	3582.243	W	7	6	—	—	3579.125	Dy	3	1	—	—
3585.066	Dy	300	100	—	—	3582.201	Fe	30	30	—	—	3579.12	Ho	—	4	—	Ex
3585.057	Th	1	4	—	—	3582.124	Ce	2	—	—	—	3579.091	V I	7	1	—	—
3585.03	Tb	15	50	Ed	—	3582.085	Zr II	3	3	—	—	3579.08	Eu	6 w	1 h	—	—
3585.025	Re	15	—	—	—	3582.063	Cb	3	5	—	—	3579.076	Ta	15	1	—	—
3584.98	C II	—	2	Fl	—	3582.030	Dy	25	10	—	—	3579.073	Mo	—	25	—	—
3584.969	Cb	30	50	—	—	3582.022	U	6	15	—	—	3579.029	Co I	5	—	—	—
3584.964	Gd	100	100	—	—	3582.015	Th	5	6	—	—	3578.950	Ce	3	—	—	—
3584.960	Fe	30	25	—	—	3581.916	Gd	15	15	—	—	3578.93	Se	—	[12]	—	Bt
3584.879	U	30	12	—	—	3581.891	Mo	10	15	—	—	3578.903	Co I	8	2	—	—
3584.805	Ce	2	1	—	—	3581.887	W	4	9	—	—	3578.89	La II	2 h	3 h	—	Me
3584.801	Co I	25	—	—	—	3581.874	Co I	3	—	—	—	3578.822	Ce	3	—	—	—
3584.790	Fe I	3	—	—	—	3581.842	Er	10 h	2	—	—	3578.80	Dy	2	1	—	m
3584.787	W	3	2	—	—	3581.840	Pr	10	7	—	—	3578.762	Ta	2	1 h	—	—
3584.663	Ir I	10	1 h	—	—	3581.838	U	6	15	—	—	3578.75	Pr	8	5	—	—
3584.663	Fe I	100	60	S	—	3581.810	Fe	3	2	—	—	3578.747	Hg	—	[40]	—	St
3584.6	Rn	—	—	[2]	Pe	3581.805	Mo	10	5	—	—	3578.70	Tb	8	—	—	Ed
3584.532	Ir I	3	—	—	Ab	3581.794	Os	5	8	—	—	3578.687	Ti II	25	5	—	—
3584.518	Er	25	15 h	—	—	3581.68	Sn II	—	6	Ro	—	3578.687	Cr I	500 R	400 r	—	—
3584.514	Yt II	20	15	—	—	3581.68	La II	—	20 hl	Me	—	3578.639	V	35 d	80 d	—	—
3584.512	Ta	35	3	—	—	3581.649	Fe I	4	3	—	—	3578.584	Cb	15	1	—	—
3584.46	I I	—	—	[5]	Db	3581.62	A	—	[15]	Rt	—	3578.58	Gd	8	—	—	—
3584.447	Ce	2	—	—	—	3581.3	Ca	—	[4]	Bs	—	3578.571	Pr	2	1	—	—
3584.426	Dy	50	20	—	—	3581.295	Ca	—	2	—	—	3578.49	Eu	2	1	—	—

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3578.47	Dy	4	2	Ed	3576.156	Nd	15	6	-	3573.400	Fe	50	20	-
3578.424	Pr	9	3	-	3576.15	Si	8	2 h	-	3573.396	Sm	5	2	-
3578.40	Tb	8	-	Ed	3576.053	Yt I	15	2	-	3573.3	Rn	-	[2]	Pa
3578.380	Fe I	40	5	-	3576.047	Tb	3	3	-	3573.24	Cs	-	[4]	Ba
3578.34	Gd	5	5	-	3576.01	Eu	5	1 h	Kn	3573.222	Th	5	6	-
3578.33	Er	3 w	-	-	3575.980	Fe I	80	25	-	3573.22	Ho	8	10	Ex
3578.327	U	8	1	-	3575.976	W	8	7	-	3573.183	Nd	10	4	-
3578.266	Ti I	8	1	-	3575.952	Ni I	3	-	-	3573.094	Cb	2	5	-
3578.234	Cb	1	5	-	3575.90	Tb	15	3	Ed	3573.084	Zr II	10	9	-
3578.226	Zr II	5	6	-	3575.856	I I ₂ II	-	[15]	Ke	3573.077	Er	10	-	-
3578.110	Eu	6	1	-	3575.848	Cb	50	80	-	3573.03	Dy	3	1	m
3578.106	Pr	10	5	-	3575.792	Zr I	100	5	-	3572.931	U	6	1	-
3578.075	Co I	18	-	-	3575.765	U	1	6	-	3572.86	W	-	7	-
3578.03	Co II	-	30	Me	3575.68	Er	3	-	-	3572.825	Sm	-	2	-
3578.00	Tb	8	-	Ed	3575.67	Mo	3 d	4 d	-	3572.805	Re I	2 h	-	-
3577.989	Dy	150	50	-	3575.662	Ce	3	-	-	3572.754	Ce	5	1	-
3577.959	Rb II	-	[15]	Rr	3575.607	Mo	3	4	-	3572.751	Nd	10	10	-
3577.919	U	10	-	-	3575.573	Yb	20	2	-	3572.75	In	-	6	-
3577.880	Mn	50	25	-	3575.544	Pr	9	3	-	3572.748	Cr I	25	5	-
3577.874	V I	50	40	-	3575.474	U	1	8	-	3572.734	Pb	200	20	-
3577.846	Pr	6	-	-	3575.45	Sn II	-	5 wh	Mc	3572.68	Kr II	-	[15 whl]	Me
3577.798	Ce	2	2	-	3575.448	Sm	2	1	-	3572.65	Zn	5	[1]	Vs
3577.783	U	4	1	-	3575.42	Eu	2 wh	1 h	-	3572.628	V I	5 h	2 h	-
3577.774	Sm II	20	3	-	3575.375	Fe	40	30	-	3572.60	Eu	3	1 h	-
3577.75	Fe	2	-	-	3575.361	Co I	200 r	25	-	3572.592	Mo	-	20	-
3577.718	Cb	10	15	-	3575.323	Th	6	10	-	3572.523	Sc II	30	50	-
3577.688	Co I	2 h	-	-	3575.3	Rn	-	[5]	Pe	3572.476	W II	10	35	-
3577.644	V	-	3	Me	3575.288	Ce	4	1	-	3572.473	Zr II	60	80	-
3577.64	W	-	6 d	-	3575.250	Fe I	10	5	-	3572.428	Ce	12	5	-
3577.622	Ir I	4	-	Ab	3575.226	W	10	9	-	3572.405	Nd	25	6	-
3577.615	Ba	4	-	-	3575.177	Ce	2	1	-	3572.399	Th	8	8	-
3577.60	P	-	[50 d]	Gu	3575.129	Cb	10	10	-	3572.25	A I	-	[300]	Ms
3577.60	Kr II	-	[4 hl]	Me	3575.129	V I	20	15	-	3572.24	Pr	5	2	-
3577.553	Zr I	12	1	-	3575.118	Fe I	15	5	-	3572.117	Er	5	-	-
3577.53	I	-	[5]	Bl	3574.977	Nd	30	8	-	3572.11	Eu	3 w	1	-
3577.51	Tm	5	8	Me	3574.964	Co I	200	25	-	3572.07	Tb	30	8	Ed
3577.487	U	3	-	-	3574.960	U	4	-	-	3572.02	W II	4	9	m
3577.487	Os	3	-	-	3574.958	Pr	10	4	-	3572.015	Ru	3	5	-
3577.465	Pr	30	8	-	3574.935	Cr I	8	6	-	3571.999	Pt II	-	15	-
3577.458	Ce	300	12	-	3574.92	F II	-	[6]	Di	3571.996	Fe I	100	80	-
3577.41	Rb	-	[20]	Ok	3574.805	Cr I	8	15	-	3571.941	Gd	25	20	-
3577.350	Re	2	-	-	3574.78	Ho	10	20	Ex	3571.869	Ni I	1000 R	40 h	-
3577.349	U	6	1	-	3574.772	V I	25	12	-	3571.854	Ta	18	3	-
3577.262	Co I	3	-	-	3574.759	U	12	1	-	3571.787	Pr	10	3	-
3577.243	Sr I	2	-	ISn	3574.743	Er	10	1	-	3571.769	Sm	5 h	-	-
3577.240	Ni I	4	-	-	3574.738	Gd	25	25	-	3571.73	Er	15 d	1	-
3577.231	Cb	4	3	-	3574.64	Ne II	-	[18]	Bn	3571.72	I	-	[5]	Bl
3577.23	F	-	[60]	Di	3574.63	Dy	2	1	m	3571.706	Re	5	-	-
3577.225	V	-	20	Me	3574.577	Ru	4	15	-	3571.691	U	2	6	-
3577.219	Th	1	2	-	3574.457	Mo	5	5	-	3571.68	F II	-	[6]	Di
3577.2	air	-	3	m	3574.426	La I	30	8	-	3571.68	Fe	2	-	-
3577.20	Pt II	-	10	Sh	3574.346	V	-	40	-	3571.67	Dy	3	2	m
3577.093	Ir	3	-	-	3574.337	Nd	20	8	-	3571.66	Eu	2 w	-	-
3577.08	Tb	8	3	Ed	3574.330	U	2	3 h	-	3571.653	V I	40	35	-
3577.076	U	15	3	-	3574.245	Ti I	15	3	-	3571.575	Th	8	8	-
3577.05	Yb	7	20	-	3574.201	Ch	1	10	-	3571.560	U	3	2	-
3576.98	Ga	-	4	-	3574.20	Ho	-	4 h	Ex	3571.480	Cb	2	3	-
3576.873	Dy	200	50	-	3574.160	Dy	200	100	-	3571.454	Ce	3	-	-
3576.854	Zr II	15	25	-	3574.13	Tb	8	-	Ed	3571.432	Yt I	15	2	-
3576.851	Mo	1	3	-	3574.110	U	12	8	-	3571.362	Ce	4	1	-
3576.85	Ho	-	4	Ex	3574.079	Os	30	5	-	3571.35	I II	-	[5]	Bl
3576.838	U	2	1	-	3574.06	Tm	20	30	Me	3571.35	Tb	8	-	Ed
3576.83	Tb	15	3	Ed	3574.039	Cr I	50	15	-	3571.32	Eu	2 W	-	-
3576.83	Pr	2	-	-	3573.969	W	4	3	-	3571.262	Mo	5	8	-
3576.8	Rb	-	[6]	Dr	3573.904	Eu	3	1	-	3571.26	Ne II	-	[12]	Bn
3576.762	Ni II	2	40 h	-	3573.888	Fe	40	30	-	3571.227	Fe I	40	6	-
3576.760	Fe	80	40	S	3573.888	Sm	10 h	-	-	3571.212	V	10	5	-
3576.759	Gd	5	3 h	-	3573.882	Mo	20	25	-	3571.180	U	6	-	-
3576.737	Ir I	10	2	Ab	3573.87	Sn II	-	2	Ro	3571.155	Pd I	40 h	40 h	-
3576.70	W	-	5 d	-	3573.843	Er	10	4	-	3571.140	Ta	5	3	-
3576.62	A	-	[300]	Rt	3573.838	Dy	80	80	-	3571.099	Eu	3	-	-
3576.581	La II	-	3 d	-	3573.836	Fe	20	15	-	3571.075	Sm	6	2	-
3576.562	Th	3	3	-	3573.77	Yt	3	3	Me	3571.037	V I	35	20	-
3576.51	Cd	-	3	-	3573.737	Ti II	20	40	-	3571.03	Tb	15	-	Ed
3576.382	W	7	5	-	3573.724	Ir I	8	100	-	3571.02	Dy	3	-	Ed
3576.340	Sc II	18	45	-	3573.701	Ce	10	3	-	3570.99	Tm	4	10	Me
3576.32	Pr	10	3	-	3573.666	I II	-	[18]	Ke	3570.983	Ce II	6	1	-
3576.28	Ba II	-	3	Rs	3573.643	Cr I	60	15	-	3570.98	Nd	6	2	-
3576.25	Ho	4	6	Ex	3573.612	Ir I	5 h	-	Ab	3570.930	U	2	2	-
3576.250	Dy	300	-	-	3573.57	Tb	15	-	Ed	3570.773	Ta	5	1 h	-
3576.242	Ta	18	1 h	-	3573.516	V I	20	20 h	-	3570.756	Er	10	1	-
3576.233	Ir	2 h	-	-	3573.511	Th	3	3	-	3570.655	W	15	15	-
3576.232	Ce	18	1	-	3573.45	Eu	3 W	-	-	3570.65	U	3 d	8 d	-
3576.219	U	8	12	-	3573.438	Ta	15	70 w	-	3570.647	Mo	15	20	-
3576.174	Mo	3	5	-	3573.411	W	8	7	-	3570.594	Ru	12	60	-

3570.5—3563.5 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3570.56	Pr	8	4	—	—	3568.181	Mo	3	4	—	—	3566.005	U	6	—	—	—
3570.56	Yb	2	15	—	—	3568.135	Zr II	4	2	—	—	3565.987	Ti II	6	25	—	—
3570.462	Mo	2	4	—	—	3568.126	Ce	10	1	—	—	3565.93	Au I	20	15	—	—
3570.408	Nd	2	—	—	—	3568.067	Mo	3	3	—	—	3565.903	Tm	40	50	Me	Me
3570.34	Tb	8	—	—	Ed	3568.040	W	10	10	—	—	3565.855	Cb	3	2	—	—
3570.33	P II	—	—	[30 d]	Gu	3568.00	Sb II	1	6	—	—	3565.85	W	—	5	—	—
3570.32	Ta	2	—	—	Ks	3567.995	Ir	15	5	—	—	3565.84	Ne II	—	[12]	Bn	Bn
3570.258	Fe	50	15	—	—	3567.995	Cb	2	50	—	—	3565.8	bh La	4 h	—	—	Me
3570.256	Re	30	—	—	—	3567.98	Cl	—	[6]	Bl	—	3565.80	Eu	2	1	—	—
3570.182	Rh I	400 r	150	—	—	3567.978	Th	5	5	—	—	3565.750	U	1	15 h	—	—
3570.109	Sn	—	5	—	—	3567.86	Tb	8	—	Ed	—	3565.74	Tb	15	15	Ed	Ed
3570.100	Mn	20 R	15	—	—	3567.84	Lu	100	7	—	Me	3565.691	Cb	—	5 h	—	—
3570.097	Fe I	300	300	—	—	3567.735	Mo	2	3	—	—	3565.65	Dy	6	2	Ed	Ed
3570.095	La II	10	10	—	—	3567.73	Ba II	2	3	—	—	3565.627	Ta	—	50 l	—	—
3570.088	Ce	3	—	—	—	3567.723	Eu	3	—	—	—	3565.62	W	7	6	—	—
3570.07	Tb	8	—	—	Ed	3567.720	Fe	2	—	—	—	3565.588	Fe I	10	4	—	—
3570.05	Si	—	2	—	Sy	3567.707	Th	3	3	—	—	3565.431	Zr II	3	7	—	—
3570.041	Mn	20 R	—	—	—	3567.701	Sc II	15	40	—	—	3565.424	Ce	6 s	2	—	—
3569.888	Th	8	5	—	—	3567.678	W	6 s	7	—	—	3565.381	Fe I	400	300	S	S
3569.882	U	—	3	—	—	3567.657	A I	—	[300]	IHu	—	3565.34	Dy	6	—	Ed	Ed
3569.852	Cb	3	3	m	—	3567.576	Er	8	—	—	—	3565.326	Ti II	2	5	—	—
3569.833	Ir I	7	3	—	—	3567.56	Ti II	—	[10]	Sx	—	3565.32	Hf	2	—	Me	Me
3569.827	Ce	5	1	—	—	3567.486	U	3 h	1 h	—	—	3565.23	Eu	5	—	Kn	Kn
3569.82	Eu	4	—	—	—	3567.465	Mo	1	3	—	—	3565.202	Re	2	—	—	—
3569.804	Mn	12	5	—	—	3567.383	Fe I	10	2	—	—	3565.177	Er	6	—	—	—
3569.775	Os	100	30	—	—	3567.364	Hf	20	10	—	—	3565.161	Cr	6	1	—	—
3569.76	Ag I	4 h	—	—	Bx	3567.36	Tm	10	—	Me	—	3565.156	W	4	5	—	—
3569.695	Cb	2	2	m	—	3567.35	Ta	4	—	Ks	—	3565.111	Cs	—	[10]	Sv	Sv
3569.68	Kr II	—	—	[2 h]	Me	3567.35	Tb	15	15	Ed	—	3565.056	Cb	10	15 h	—	—
3569.669	Dy	40	10	—	—	3567.30	Dy	4	—	Ed	—	3565.044	U	6	—	—	—
3569.627	Th	2	2	—	—	3567.266	Th	2	2	—	—	3565.02	A	—	[10]	Rt	Rt
3569.584	W	4	5	—	—	3567.25	Ho	—	4	Ex	—	3564.953	Cr	8	1	—	—
3569.56	Pr	10	5	—	—	3567.247	W	7	6	—	—	3564.951	Co I	150 w	—	—	—
3569.529	U	1	5	—	—	3567.171	S II	—	[40]	Hn	—	3564.881	U	3	6	—	—
3569.505	Mo	2	5	—	—	3567.166	Ce	2	2	—	—	3564.798	Ru	2	5	—	—
3569.498	Nd	12	—	—	—	3567.155	Ru I	3	9	—	—	3564.794	Ta	18	2	—	—
3569.494	Sm	3	—	—	—	3567.103	Cb	5	30 w	—	—	3564.730	Re	20	—	—	—
3569.494	Zr I	15	2 h	—	—	3567.1	Pb	—	5	Sx	—	3564.71	Th	—	5	—	—
3569.493	Mn	25 h	8	—	—	3567.092	Yb	1	4	—	—	3564.710	Cr	20	8	—	—
3569.47	F II	—	[3]	Di	—	3567.068	Mo	5	5	—	—	3564.643	Co I	2	—	—	—
3569.466	Cb	20	15	—	—	3567.046	Th	4	4	—	—	3564.64	Gd	2	4	—	—
3569.379	Co I	400 R	100	—	—	3567.038	Fe I	50	15	—	—	3564.587	U	5	8	—	—
3569.316	Ce	8	2	—	—	3566.962	U	1	8	—	—	3564.562	Ru I	4	5	—	—
3569.28	Cs	—	[4]	Bs	—	3566.830	Sm	20	3	—	—	3564.540	Ti I	12	2	—	—
3569.252	Er	8	—	—	—	3566.830	Ir I	2	—	—	—	3564.530	Fe	30	15	—	—
3569.25	Dy	2	—	m	—	3566.80	Dy	4	2 h	m	—	3564.516	Mo	1	8	—	—
3569.235	W	8 d	7 d	—	—	3566.79	Eu	4	1 h	—	—	3564.40	Er	8 d	1 h	—	—
3569.229	Nd	20	4	—	—	3566.75	Ti II	—	[10]	Sx	—	3564.397	Ti I	10	1	—	—
3569.19	Ta	2	—	Ks	—	3566.747	Mo	3	3	—	—	3564.38	W	3 d	6 d	—	—
3569.17	Eu	4 W	1 h	—	—	3566.742	Pr	6	2	—	—	3564.353	Ru I	3	6	—	—
3569.147	Cr	4	4	—	—	3566.716	Ta	50	5 l	—	—	3564.314	Hf	2	1	—	—
3569.083	V I	7	1	—	—	3566.687	Ba	5	—	—	—	3564.30	Xe II	—	[10]	Hu	Hu
3569.062	U	12	20	—	—	3566.64	Sb	—	25 wh	Sp	—	3564.293	Cr	15	6	—	—
3569.041	Hf II	20	50	—	—	3566.626	Pd	60	—	—	—	3564.291	Mo	5	5	—	—
3568.994	Dy	100	—	—	—	3566.598	U	30	10	—	—	3564.27	A I	—	[100]	Ms	Ms
3568.987	W	9	9	—	—	3566.582	Fe	2	—	—	—	3564.244	Dy	25	10	—	—
3568.98	Tb	15	15	Ed	—	3566.551	Nd	3	—	—	—	3564.208	Sm	2	1	—	—
3568.979	Fe I	50	35	—	—	3566.491	Ir I	8	—	—	—	3564.20	Pr	3 h	—	—	—
3568.940	V I	20	15	—	—	3566.474	Tm	60	20	Me	—	3564.181	U	6	4	—	—
3568.91	Ca I	2	—	Cw	—	3566.471	Sm	10	2	—	—	3564.132	Rh I	25	1	—	—
3568.891	Sm II	4	1	—	—	3566.42	P II	—	[70]	Gu	—	3564.125	Co I	4	5	—	—
3568.879	Mo	4	2	—	—	3566.409	Ir I	6	5	—	—	3564.116	Fe I	15	2	—	—
3568.879	Nd	6	12	—	—	3566.374	Mo	3 d	3 d	—	—	3564.094	Nd	30	4	—	—
3568.875	Zr I	12	—	—	—	3566.372	Ni I	2000R	100 wh	—	—	3564.092	Os	5	10	—	—
3568.822	Fe	15	7	—	—	3566.336	Nd	8	—	Kn	—	3564.077	Cb	2	20	—	—
3568.815	U	6	3	—	—	3566.311	Fe I	3	1	—	—	3564.053	Gd	10	10	—	—
3568.725	Cb	5	5	—	—	3566.309	Mo	3	3	—	—	3564.006	W II	—	6	—	—
3568.690	U	3	—	—	—	3566.24	I II	—	[5]	Mu	—	3564.0	bh Ca	20	—	L	L
3568.68	Tm	5	5	Me	—	3566.20	Ho	—	4 h	Ex	—	3563.93	Th	2	2	—	—
3568.65	Dy	4	—	Ed	—	3566.182	V II	25	100	—	—	3563.925	Cr	—	8	—	—
3568.566	Os	2	5	—	—	3566.163	Cr	80 wh	12 wh	—	—	3563.885	Tm	15	3	Me	Me
3568.53	Ne II	—	[25]	Bn	—	3566.148	Fe II	2	—	Do	—	3563.885	U	—	4	—	—
3568.525	U	2	2	—	—	3566.14	Co I	3	—	Hs	—	3563.823	Ce II	2	1	—	—
3568.513	Ce	2	—	—	—	3566.104	Zr I	20	10	—	—	3563.80	Xe I	—	[3]	Me	Me
3568.51	Tb	50	50	Ed	—	3566.1	bh La	5 h	—	Me	—	3563.771	Pr	30	8	—	—
3568.506	Cb	10	50	—	—	3566.10	Ca I	2	—	—	—	3563.755	Mo	10	10	—	—
3568.435	Ag	2	1	—	—	3566.095	Ti	8	2 h	—	—	3563.74	Tb	8	—	Ed	Ed
3568.426	Co I	2	—	—	—	3566.090	Er	12	—	—	—	3563.72	Eu	6 w	1 h	—	—
3568.423	Fe I	20	4	—	—	3566.089	Cb	5	5	—	—	3563.699	Dy	50	30	—	—
3568.418	Cr	6 wh	—	—	—	3566.089	Pr	10	6	—	—	3563.661	U	12	5	—	—
3568.418	W	4	4	—	—	3566.08	Th	10	3	—	—	3563.65	W	—	5	—	—
3568.33	Dy	4	2	m	—	3566.06	Dy	4	2	m	—	3563.620	Cb	10	15	—	—
3568.29	Pr	5	4	—	—	3566.054	Mo	10	10	—	—	3563.61	Si	—	2	Sy	Sy
3568.258	Sm II	40	50	—	—	3566.033	Ce	10 w	6 w	—	—	3563.591	Ce	2	—	—	—
3568.231	Re	40	—	—	—	3566.01	Ta	7	—	Ks	—	3563.590	Sm	3	1	—	—

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3563.553	Er	5	—	—	—	3560.864	Th	10	4	—	—	3557.982	Ta	35	2 h	—	—
3563.497	Cb	30	30	—	—	3560.855	Os I	150 R	100	—	—	3557.920	W	2	12	—	—
3563.490	Pr	3	—	—	—	3560.798	Ce	300	2	—	—	3557.842	U	12	1	—	—
3563.452	W	9	7	—	—	3560.77	Tl II	—	[25]	Sx	—	3557.84	Ne II	—	[12]	Bn	—
3563.403	Nd	50	10	—	—	3560.729	Nd	30	20	—	—	3557.81	Er	10 wd	2 w	—	—
3563.402	Er	12	1	—	—	3560.727	Yb	8	100	—	—	3557.800	Rb I	—	[15]	Rr	—
3563.397	U	—	6	—	—	3560.697	Fe	50	15	—	—	3557.79	Tm	40	20	Me	—
3563.396	V I	15	8	—	—	3560.603	Ca	—	2	—	—	3557.75	Eu	3	1	—	—
3563.384	Th	10	3 h	—	—	3560.596	V II	10	50	—	—	3557.70	Pr	2	2	—	—
3563.26	A I	—	[100]	Ms	—	3560.57	Eu	7 w	1 h	—	—	3557.632	Dy	3	2	—	—
3563.230	Cb	2	2	—	—	3560.51	I	—	[2]	Bl	—	3557.568	U	1	2 h	—	—
3563.16	Er	15 w	6	—	—	3560.482	Cb	—	10	—	—	3557.487	Ce	6	1	—	—
3563.154	Dy	200	100	—	—	3560.468	Os	1	5 h	—	—	3557.464	Th	5	5	—	—
3563.138	Mo	15	15	—	—	3560.40	Tl II	—	[12]	Sx	—	3557.453	Sm	15	1	—	—
3562.980	Pr	8	3	—	—	3560.357	Cb	3	2	Me	—	3557.362	Sm II	30	2	—	—
3562.950	He I	—	[4]	Ps	—	3560.33	Yb	20	50	—	—	3557.323	U	1	2	—	—
3562.942	Ne I	—	[15]	Ps	—	3560.308	U	4	2 h	—	—	3557.298	Fe	15	—	—	—
3562.918	Co I	10	—	—	—	3560.306	Co I	18 h	3	—	—	3557.251	La II	10	8	—	—
3562.90	Tb	30	8	Ed	—	3560.266	Sm	25	3	—	—	3557.212	W	8	8	—	—
3562.89	Pb	—	20	Sx	—	3560.15	Ho	6	8	Ex	—	3557.170	Ir I	25	30	—	—
3562.882	Hg	—	[2]	St	—	3560.149	Dy	40	20	Ed	—	3557.163	V I	8	—	—	—
3562.88	Cr	10	3	—	—	3560.071	W	5	4	—	—	3557.14	Pr	15	5	—	—
3562.822	Ir I	6	2	—	—	3559.958	Th	6	8	—	—	3557.11	Er	4	1	—	—
3562.712	U	3	—	—	—	3559.930	Ni I	5	—	—	—	3557.062	Gd	25	25	—	—
3562.67	Dy	5	1	m	—	3559.92	P II	—	[30]	Gu	—	3557.058	Ru	3	5	—	—
3562.649	Cb	3	3 h	Me	—	3559.902	Er	15	7	—	—	3557.015	W	3	4	—	—
3562.616	Ru	2	3	—	—	3559.901	Cb	—	10	—	—	3557.01	U	—	3 d	—	—
3562.548	Pr	10	4	—	—	3559.882	Mo	5	5	—	—	3556.940	Mo	2 d	25	—	—
3562.52	Tb	8	—	Ed	—	3559.81	I	—	[5]	Bl	—	3556.91	A II	—	[10]	Rt	—
3562.519	W	—	12	—	—	3559.798	Cs	—	[5]	Sv	—	3556.893	Ce	6	—	—	—
3562.484	Zr I	8	—	—	—	3559.786	Os I	150	50	—	—	3556.883	Fe I	300	150	—	—
3562.475	Cr	10	5	—	—	3559.781	Cr	15	10	—	—	3556.85	Eu	10 w	—	Kn	—
3562.47	P II	—	[30]	Gu	—	3559.76	Tb	15	8	Ed	—	3556.801	V II	30	40 WR	Ex	—
3562.456	Re	2 h	—	—	—	3559.720	Mo	—	25	—	—	3556.76	Ho	15	40	—	—
3562.337	Os	50	20	—	—	3559.709	W	10	8	—	—	3556.728	Sm II	35	3	—	—
3562.28	Cr	20	12	—	—	3559.607	Yb	10	—	—	—	3556.696	Fe I	4	1	—	—
3562.22	Pr	10	4	—	—	3559.596	Cb	2	100	—	—	3556.67	Tb	15	3	Ed	—
3562.203	Sm	2	1	—	—	3559.51	A	—	[15]	Ms	—	3556.626	Ru	3	5	—	—
3562.19	A II	—	[5]	Rt	—	3559.509	Fe	50	25	—	—	3556.617	Ti	2	1	—	—
3562.18	Eu	4	1	—	—	3559.456	Th	10	10	—	—	3556.597	Zr II	15	50	—	—
3562.15	K II	—	[15]	Bn	—	3559.409	Re I	2	—	—	—	3556.548	Ta	3	—	—	—
3562.137	V I	12	8	—	—	3559.39	Tb	8	8	Ed	—	3556.487	Eu	2	1 h	—	—
3562.106	Mo	5	5	—	—	3559.328	Co II	6	—	—	—	3556.48	P II	—	[100]	Gu	—
3562.097	Co I	15	—	—	—	3559.27	Dy	10	4	m	—	3556.44	Sr	—	2	Sd	—
3562.091	Ce	6	—	—	—	3559.245	Mo	3	3	—	—	3556.365	Ce	5	1	—	—
3562.050	U	—	6	—	—	3559.242	Sb	2 h	50 wh	—	—	3556.36	Dy	2	—	Ed	—
3561.981	Ba	3	3	Sz	—	3559.21	Cr	2 h	—	—	—	3556.327	Mo	—	25	—	—
3561.910	Ti II	5	12	—	—	3559.2	Rn	—	[5]	Wo	—	3556.312	Th	2 d	2	—	—
3561.897	Zr	3	2	—	—	3559.123	Cb	8	8	—	—	3556.249	V	40	2	—	—
3561.894	Ru	2	5	—	—	3559.105	Sm	40 d	20	—	—	3556.184	Ti	15	1	—	—
3561.891	Er	8	—	—	—	3559.092	W	6	4	—	—	3556.130	Cr II	20	4	—	—
3561.881	Cb	—	8	—	—	3559.087	Sr II	4	2 h	—	—	3556.098	Ce	8	—	—	—
3561.812	Fe	4	—	—	—	3559.083	Fe	4	2	—	—	3556.083	Yt II	2	3 h	—	—
3561.809	Th	3	1	—	—	3559.081	Pr	8	4	—	—	3556.02	W	—	6	—	—
3561.800	U	12	30	—	—	3559.076	Yb	5	—	—	—	3556.017	Cb	5	10	—	—
3561.751	Ni I	70	12	—	—	3558.992	Ir I	50	50	Ab	—	3555.973	Os	30	12	—	—
3561.74	Tb	200	200	Ed	—	3558.961	Zr I	8	2	—	—	3555.97	A I	—	[100]	Ms	—
3561.737	Hg	—	[2]	St	—	3558.946	Re I	50 w	—	—	—	3555.96	Dy	6	4	Ed	—
3561.73	Al	—	2	Gn	—	3558.877	Ce	3	2	—	—	3555.940	Co II	—	6	—	—
3561.691	Cb	4	10	—	—	3558.866	Sm	5	—	—	—	3555.906	U	1	3	—	—
3561.68	Pr	6	3	—	—	3558.813	Pr	9	2	Kn	—	3555.82	Tm	6	—	Me	—
3561.664	Hf II	20	35	—	—	3558.805	Os	4 h	2	—	—	3555.788	Ce II	4	1	—	—
3561.594	Nd	8	2	—	—	3558.795	Mo	3	5	—	—	3555.788	Cr	20	6	—	—
3561.581	Sm	15	4	—	—	3558.781	Co I	40 w	—	—	—	3555.755	Th	12	3	—	—
3561.575	Ti II	10	20	—	—	3558.77	Tb	15	8	Ed	—	3555.752	W	8	7	—	—
3561.538	Ce	6	—	—	—	3558.745	Yt I	3	—	—	—	3555.740	V I	15	1	—	—
3561.452	W	—	10	—	—	3558.736	Er	10	1	—	—	3555.729	Ta	10	2 h	—	—
3561.413	U	12	—	—	—	3558.706	Ce II	8	1	—	—	3555.723	Nd	100	15	—	—
3561.373	Ir	5	—	—	—	3558.58	Cr	—	8 h	—	—	3555.707	Os	10	8	—	—
3561.361	Mo	1	20	—	—	3558.538	Sc II	15	40	—	—	3555.70	Tb	8	—	Ed	—
3561.28	Eu	3	1 h	—	—	3558.519	Cr	20	—	—	—	3555.69	Dy	2	—	Ed	—
3561.273	Er	12 s	—	—	—	3558.519	Gd	100 r	50	—	—	3555.677	U	4	2	—	—
3561.27	Pr	25	4	—	—	3558.518	Fe I	400	300	S	—	3555.603	Ir I	10	2	—	—
3561.253	W	8	4	—	—	3558.518	Ti	15	7	—	—	3555.54	Kr II	—	[8 whl]	Me	—
3561.23	Ne II	—	[12]	Bn	—	3558.483	Hf	3	1	—	—	3555.512	U	1	4 h	—	—
3561.203	Hg	10	6 h	St	—	3558.20	Dy	15	4	m	—	3555.475	Fe	2	—	—	—
3561.177	I	—	[40]	Ke	—	3558.189	Gd	25	25	—	—	3555.433	Mo	3	3	—	—
3561.172	Ir I	5	2	Ab	—	3558.15	Ho	—	4 h	Ex	—	3555.37	Eu	4 d	1 h	—	—
3561.143	Cb	5	10	—	—	3558.100	Mo	15	15	—	—	3555.353	Sm	2	2	—	—
3561.11	Zr II	2	—	Ks	—	3558.100	Fe	2	—	—	—	3555.327	Ir	2	—	—	—
3561.04	A II	—	[15]	Rt	—	3558.019	Er	10	1	—	—	3555.323	U	15	6	—	—
3560.92	Tm	8	—	Me	—	3558.015	U	3	3 h	—	—	3555.29	Tb	15	3	Ed	—
3560.901	Cr	2 h	1 h	—	—	3558.013	I	—	[7]	Bl	—	3555.27	Dy	6	—	m	—
3560.893	Co I	200	25	—	—	3558.012	Cb	5	5	—	—	3555.24	Rn I	—	[3]	Re	—
3560.887	Fe	2	—	—	—	3558.007	Pr	10	3	—	—	3555.219	Ce	3	1	—	—

3555.2—3548.0 A.

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
		Arc	Spk., [Dis.]			Arc	Spk., [Dis.]			Arc	Spk., [Dis.]
3555.20	Pr	10 rd	4 rd	3552.397	Mo	3	3	3550.03	A	—	[5]
3555.175	W II	6	15	3552.367	Ce	2	2	3550.03	Ca I	3	—
3555.160	Ce	5	2	3552.36	Rn I	—	[3]	3549.992	Rh I	10	2
3555.142	V I	10	3	3552.342	Yb	15	15	3549.889	Re I	40	—
3555.058	Th	4 d	1 d	3552.323	W	5	4 s	3549.872	Fe I	15	5
3554.993	Ce II	25	—	3552.317	Er	15	—	3549.86	Xe I	—	[10]
3554.929	Fe I	400	300	3552.284	Sm II	15	3	3549.848	Re I	25	20 s
3554.85	Ca	2	4	3552.241	Ce	2	—	3549.82	Yb	10	20
3554.83	Dy	4	4	3552.225	Cb	2	1	3549.80	Dy	6	—
3554.67	Er	6 d	1	3552.195	Sm	2	—	3549.741	Th	4	4
3554.664	Cb	15	20	3552.19	I II	—	[18]	3549.736	Zr I	15	3
3554.627	Ce	10	2	3552.172	U	8	12	3549.735	Ru	3	5
3554.583	W	—	5	3552.15	Te	—	[15]	3549.733	Ce	2	1
3554.544	Oa	8	5	3552.118	Fe I	10	6	3549.72	S	—	[8]
3554.519	Cb	15	20	3552.100	Ir I	20	2	3549.72	Pr	5	1
3554.513	Fe I	4	2	3552.07	Pr	10	2	3549.718	U	1	2
3554.505	U	3	—	3552.067	Ce II	5	2	3549.684	Os	20	12
3554.43	Lu	50	150	3552.00	Al II	—	[2]	3549.68	Eu	3	2 h
3554.394	He I	—	[7]	3551.99	Dy	4	—	3549.61	Mg II	4	—
3554.385	Pr	5	3	3551.961	Cb	2	5	3549.597	Th	2	1
3554.318	Th	2 d	1 d	3551.96	Pr	8 hd	—	3549.553	Er	7	1
3554.306	A I	—	[300]	3551.96	Tb	15	—	3549.543	Rh I	150	50
3554.293	Er	9	—	3551.951	Zr II	30	40	3549.526	Pr	10	3
3554.213	W	9	8	3551.870	As II	—	3	3549.510	Zr II	10	10
3554.195	Mo	5	10	3551.82	As II	—	10	3549.45	Ca	2	2
3554.175	Sm II	25	3	3551.795	Er	5 s	1	3549.42	Hg II	—	[200]
3554.125	Cb	—	30	3551.790	Yt I	6	2	3549.370	Nd	—	20
3554.120	Fe I	50	20	3551.775	Ce	10	1	3549.365	Gd	125	125
3554.070	Zr II	10	6	3551.755	U	2	3	3549.338	Th	2 d	1
3554.048	Os	8	10	3551.748	Nd	15	6	3549.326	Ce	3	2
3554.04	Xe I	—	[10]	3551.666	Co I	2	—	3549.323	Re	3	—
3554.00	Hf	5	—	3551.664	Ce II	10	1	3549.291	Ir	8	2
3553.988	Nd	10	4	3551.60	Ho	—	4	3549.283	Cr	5 wh	—
3553.968	Cr	6	6	3551.595	Re	25	—	3549.263	Cb	8	8
3553.849	Pr	4	2	3551.59	Dy	10	6	3549.255	Dy	4	2
3553.848	Ru I	4	10	3551.540	W	—	10	3549.204	U	12	1
3553.835	Mo	10	1	3551.537	V I	25	12	3549.139	Mo	1	3
3553.815	Ti I	3	—	3551.534	Ni I	50	12	3549.120	Ce	6	1
3553.812	U	1	2	3551.434	Ce	10	1	3549.053	W II	5	25
3553.744	Gd	15	—	3551.405	Pr	8	2	3549.046	Ta	35	3
3553.741	Fe	100	100	3551.386	Th	2 d	1	3549.028	V	1	2
3553.668	Ru	5	1	3551.37	Pt II	—	15	3549.011	Yt II	12	50
3553.652	Re I	25 w	—	3551.306	Re	40 w	—	3549.0	Rn	—	[5]
3553.64	Pr	3 d	2 d	3551.29	Er	20	2	3548.95	Ho	6	—
3553.616	Cb	20 w	15 l	3551.28	Eu	3 d	1 h	3548.927	Eu	4	—
3553.58	A I	—	[15]	3551.276	W	6	5	3548.907	Th	2	1
3553.572	Au I	20	10	3551.269	U	3	5	3548.852	U	4	3 h
3553.57	Nd	30	30	3551.156	Dy	25	1	3548.835	Ce	8	1
3553.56	Tb	8	—	3551.15	P II	—	[30 h]	3548.82	Tb	15	3
3553.55	Dy	4	—	3551.120	Fe	2	—	3548.812	Hf	5	2
3553.51	Mg II	8	—	3551.118	Ta	—	18	3548.742	Co II	—	5
3553.49	Kr II	—	[20 h]	3551.109	Cb	5	10 h	3548.731	Cr	2 wh	4 wh
3553.483	Ni I	50	10	3551.1	Rn	—	[5]	3548.730	Mo	2	3
3553.437	U	15	—	3551.05	Pr	5 d	2 d	3548.726	Dy	3	2
3553.415	Ta	7	2	3551.043	U	6	6	3548.71	Kr II	—	[6]
3553.4	Sr I	4	—	3551.03	Tb	30	3	3548.66	Sr I	2	—
3553.379	Th	4	4	3551.028	W	7	10 l	3548.648	Ir	25	1 h
3553.340	Pr	4	2	3550.962	Mo	4	6	3548.636	Zr I	3	2
3553.271	V I	80	30	3550.939	Os	6	10	3548.616	U	8	—
3553.204	Er	25	15	3550.842	W	8	8	3548.55	Ho	—	4
3553.19	Dy	3	2	3550.822	U	12	20	3548.51	A	—	[25]
3553.161	Co I	5 h	—	3550.815	La II	10	4	3548.51	Eu	4 w	1 h
3553.111	Th	5	6	3550.714	Os	15	10	3548.494	Pt II	—	8
3553.082	Pd I	100 R	15 wh	3550.681	W	7	6	3548.48	Tm	8	20
3553.010	U	5	2	3550.635	Cr I	70	60	3548.444	Co I	18	6
3552.990	Co I	20	—	3550.630	Ru	4	5	3548.439	Mo	3 h	2 h
3552.953	Cr	3 wh	—	3550.615	Cb	2	3	3548.421	U	5	—
3552.929	Ce	3	—	3550.595	Co I	200	—	3548.402	Zr I	2	—
3552.92	Tb	8	—	3550.533	U	2	2 h	3548.260	U	3	—
3552.846	Cr	2 h	5 wh	3550.504	V	—	10	3548.259	W	5	7
3552.831	Fe I	80	50	3550.460	Zr I	35	4	3548.24	Sr	—	2
3552.81	V I	7	10	3550.450	Cb	40	30	3548.23	Er	8 d	1
3552.76	I II	—	[5]	3550.395	Ir	2	—	3548.202	Mn	40 h	40
3552.748	Th	2 d	1	3550.286	Th	4	4	3548.202	Dy	8	2
3552.727	Ce II	18 s	10	3550.271	Ir I	3	—	3548.185	Ni I	400	25
3552.721	Mn	12	—	3550.269	Ru I	4	8	3548.169	Ce	10 h	5
3552.721	Co I	20	—	3550.239	Cb	4	5	3548.133	Th	2 d	1 d
3552.720	Mo	3	5	3550.228	Dy	200	100	3548.131	Cb	2 h	5
3552.696	Hf II	20	35	3550.222	Sm	25	2	3548.111	Re	3	—
3552.693	Yt I	6	4	3550.222	Er	12	8	3548.083	Sr I	50	—
3552.677	Pr	15	6	3550.22	Pr	30 rd	8 rd	3548.09	Pr	4 d	5 d
3552.668	U	5	10	3550.2	Ra II	—	[5]	3548.089	Cb	5	5 h
3552.664	Zr I	6	4	3550.20	Ho	—	4	3548.089	Fe	9	—
3552.52	Eu	6	2	3550.175	U	1	4 h	3548.03	Eu	4	1 h
3552.45	Ba II	1	8	3550.16	Tm	5	15	3548.029	Mn	40 h	15

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3548.024	Fe I	10	7	—	3544.983	Sm	5	2	—	3542.508	Co I	2 h	—	—
3547.982	Cr	5 wh	—	—	3544.981	Gd	3	3	—	3542.496	Th	2 d	1 d	—
3547.89	Dy	4	—	m	3544.980	Yt	7	5	—	3542.490	V	—	3	—
3547.876	Os	1	8	—	3544.971	W	7	6	—	3542.458	Sm II	9 d	2	—
3547.807	Ce	3	—	—	3544.963	Cu I	35	6	—	3542.391	Pr	8	3	—
3547.802	Mn	40 h	15	—	3544.96	Pr	30	10	—	3542.381	U	4	1	—
3547.767	Ba I	10	—	Sz	3544.949	Th	5	2	—	3542.36	Er	10 d	4	—
3547.682	Zr I	200	12	—	3544.93	Tb	15	—	Ed	3542.333	Dy	90	20	Ed
3547.533	U	1	3	—	3544.92	Ho	8	—	Ex	3542.33	Ho	—	4	Ex
3547.53	Dy	6	2	Ed	3544.91	Yb	2	—	—	3542.28	Ne II	—	[4]	Bn
3547.514	Er	25 l	1 h	—	3544.796	W	7	5	—	3542.279	Ce	2	1	—
3547.470	W	8	6	—	3544.773	Ce	3	—	—	3542.273	W	3	6	—
3547.409	Th	1 d	2 d	—	3544.77	Eu	10 w	1	—	3542.243	Th	2	1	—
3547.404	Mo	3	4	—	3544.713	Ba I	20	5	Sz	3542.240	Ta	—	5	—
3547.382	Ca I	2	3	—	3544.659	U	4	—	—	3542.235	Fe I	5	1	—
3547.37	Eu	3 w	—	—	3544.651	Cb	20	15	—	3542.182	Ce	4	1	—
3547.339	Th	2 d	1 d	—	3544.633	Fe	50	6	—	3542.166	Mo	5	5	—
3547.198	Fe I	25	8	—	3544.617	Mo	40 h	2	—	3542.16	Eu	20 w	5 w	—
3547.189	U	10	12	—	3544.582	Os	12	10	—	3542.078	Fe I	150	100	—
3547.11	Eu	15 w	—	Kn	3544.54	Kr II	—	[30 whl]	Me	3541.977	Th	2	2	—
3547.029	Ti I	30	12	—	3544.464	W II	1	12	—	3541.937	F II	—	[60]	Dr
3547.001	Ce	15	3	—	3544.392	F II	—	[6]	Di	3541.912	Rh I	50	10	—
3546.982	Ru I	2	5	—	3544.389	Ce	3	—	—	3541.911	Ce	4	1	—
3546.96	V	—	20	Me	3544.369	Fe	2	—	—	3541.906	Os	20	5	—
3546.841	Dy	50	10	—	3544.36	Tb	8	3	Ed	3541.897	Cb	10	15	—
3546.83	In	—	3	Sq	3544.350	Er	10	1	—	3541.888	U	2	6	—
3546.821	Sm	3	—	—	3544.345	Cb	1	5	—	3541.885	Ta	35	15	—
3546.710	Co I	8	—	—	3544.273	Ce	3	2	—	3541.86	Dy	3	—	Ed
3546.680	U	6	8	—	3544.211	Dy	25	10 h	—	3541.765	F II	—	[100]	Dr
3546.657	Ce II	8	—	—	3544.209	U	3 h	6	—	3541.75	Tb	8	3	Ed
3546.6	bh Sr	4	—	L	3544.15	Eu	10 w	1	—	3541.662	Ce	10	2	—
3546.58	Er	8 w	—	—	3544.14	Kr II	—	[30 whl]	Me	3541.647	W	10	10	—
3546.553	U	5	3	—	3544.07	Ho	8	—	Ex	3541.631	Ru	60	10	—
3546.538	Ti	4	1	—	3544.024	Cb	8	10	—	3541.626	Nd	10 d	4 d	—
3546.52	Tb	50	8	Ed	3544.014	Th	2	1	—	3541.622	Th	8	6	—
3546.488	W	3	7	—	3544.001	Yt II	2	5 h	—	3541.60	I	—	[2]	Ke
3546.487	Cb	5	5	—	3544.00	Pr	40 r	10 r	—	3541.45	Cs	—	[4]	Bs
3546.46	Kr I	—	[3]	Me	3543.96	Te	—	[10]	Bl	3541.45	Ca	3	3	—
3546.45	Cu I	2	1 h	Ha	3543.948	Rh I	150	40	—	3541.373	Sm	10	1	—
3546.443	Pt	3	—	—	3543.933	Cb	3	5	—	3541.36	Bi	—	5 h	Om
3546.39	Lu	7	—	Me	3543.88	Eu	15 W	4	—	3541.34	Eu	12	2	Kn
3546.383	U	1	15	—	3543.86	Tb	50	15	Ed	3541.336	V	—	35	—
3546.28	Pr	6	2	—	3543.832	Ce	3	—	—	3541.29	Dy	6	—	Ed
3546.260	Th	5	3	—	3543.724	Os	15	12	—	3541.284	U	—	8	—
3546.22	Fe I	1	—	—	3543.713	W	8	7	—	3541.252	Cb	50	5	—
3546.190	Ce II	20	2	—	3543.70	Hg	—	3 h	St	3541.216	Rb II	—	[100]	Rr
3546.160	Cb	2	3	Me	3543.686	Ce	3	—	—	3541.2	Rn	—	[10]	Wo
3546.133	Os	8	5	—	3543.682	Re	3	—	—	3541.147	Ru	4	—	—
3546.132	U	12	6	—	3543.674	Fe	60	30	—	3541.086	Fe I	200	200	—
3546.096	Ir I	5	—	Ab	3543.523	Ce II	10	—	—	3541.046	Ru	10	—	—
3546.05	Tb	15	3	Ed	3543.500	V I	50	50	—	3540.986	U	—	2 h	—
3546.031	Cb	5	8	—	3543.468	Nd	8	—	—	3540.962	Cb	15	500	—
3546.02	Pr	8	1	—	3543.392	Fe	10	2	—	3540.956	Nd	—	4	—
3546.01	Yt	2	2 h	—	3543.352	Nd	10	2	—	3540.954	Kr I	—	[5]	IHu
3545.997	Mo	—	25	—	3543.35	U	12 rd	1 d	—	3540.821	Ta	18	1	—
3545.97	Ho	20	20	Ex	3543.283	Ce	10	2	—	3540.792	Ce	5	1	—
3545.914	Ce	5	1	—	3543.259	Co I	35	—	—	3540.77	Eu	3 w	—	—
3545.84	A II	—	[125]	Rt	3543.23	Tb	30	8	Ed	3540.76	Ho	6	8	Ex
3545.84	Rn I	—	[5]	Rs	3543.16	A	—	[10]	Rt	3540.731	W	10	12	—
3545.834	Fe	2	1	—	3543.156	U	2	8	—	3540.713	Fe I	10	4	—
3545.794	Gd	125	125	—	3543.15	Yb	2	5	—	3540.686	Ir I	5	2 h	—
3545.781	Ce II	8	1	—	3543.115	Mo	4	3	—	3540.67	Dy	10	2	Ed
3545.77	As	—	5	Ro	3543.107	W	4	12	—	3540.623	U	2	5	—
3545.74	Dy	6	2	Ed	3543.079	Hg	—	40	St	3540.530	V I	25	4	—
3545.668	U	3	8	—	3542.981	Cb	10	10	—	3540.465	U	6	15	—
3545.640	Fe I	90	70	—	3542.98	Pr	3	1	m	3540.454	Mo	2	3	—
3545.62	N	—	[5]	Du	3542.98	Er	7 d	3	—	3540.44	Eu	6	—	Kn
3545.603	Ce II	10	1	—	3542.90	Ne II	—	[40]	Bn	3540.380	Ce	2	2	—
3545.58	A	—	[300]	Rt	3542.86	Dy	6	2	m	3540.34	Dy	4	—	Ed
3545.58	Ca I	3	4	Cw	3542.82	In	—	3 wh	Sq	3540.312	Ce	2	3	—
3545.48	I	—	[10]	Bl	3542.775	Mo	3	2	—	3540.310	Th	3 d	1 d	—
3545.437	U	3	—	—	3542.768	Gd	25	25	—	3540.24	Tb	50	50	Ed
3545.416	Sm	3	—	Kn	3542.75	Ca	3	2	—	3540.23	Eu	3 W	—	—
3545.40	Tb	8	3	Ed	3542.717	U	2	6	—	3540.219	Mo	12	1	—
3545.396	Cb	3 w	5 w	—	3542.711	Os	150	10	—	3540.212	Mo	3	3	—
3545.37	Rb	—	[2]	Ok	3542.657	V I	15	2	—	3540.118	Fe I	100	60	—
3545.348	Th	3	3	—	3542.655	W	4	3	—	3540.117	Ce	3	—	—
3545.339	V	35	—	—	3542.632	Th	3 d	3	—	3540.05	Tl II	—	[20]	Sx
3545.290	Th	5	3	—	3542.63	Pr	8	2	—	3540.04	Ho	—	6 h	Ex
3545.229	W	12 l	10	—	3542.623	Zr II	12	30	—	3539.947	Re	15	—	—
3545.196	V II	40	300 R	—	3542.612	Ag	30	5	Fn	3539.927	W	6	4	—
3545.16	Er	2	—	—	3542.575	Ir I	10	10 h	—	3539.922	Pr	25	5	—
3545.06	Hg	—	2	St	3542.570	U	8	—	—	3539.906	Zr	8	7	—
3545.036	Co II	2	30	—	3542.558	Cb	5	30 d	—	3539.892	Sm	10	—	—
3544.99	Ti	10	2	—	3542.546	Ti	7	1	—	3539.88	Dy	4	—	Ed

3539.8—3533.0 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3539.860	Os	1	3	-	-	3537.624	Cb	2	30	-	-	3535.372	Ru	30	8	-	-
3539.836	Ce	5	-	-	-	3537.564	Sn II	2	2	-	-	3535.35	Kr II	-	-	[50 hl]	Me
3539.81	Tb	15	3	Ed	-	3537.56	Eu	4	-	-	Kn	3535.339	U	2	-	-	-
3539.78	Tl II	-	[6]	Sx	-	3537.553	Ta	2	1 h	-	-	3535.336	Th	2	-	-	-
3539.76	Eu	3	-	-	-	3537.498	Os	2	3	-	-	3535.33	A	-	-	[15]	Rt
3539.654	U	12	2	-	-	3537.493	Fe I	25	8	-	-	3535.307	Ru	5	-	-	-
3539.648	Cb	15	15	-	-	3537.482	Ti	7	2	-	-	3535.307	Mn	5	-	-	-
3539.63	Pr	5	2	-	-	3537.475	Cb	30	30	-	-	3535.301	Cb	300	500	-	-
3539.62	Dy	6	4	Ed	-	3537.47	Pr	8	3	-	-	3535.271	Mo	3	3	-	-
3539.598	Er	9	-	-	-	3537.466	Re I	80 w	-	-	-	3535.259	W	4	7	-	-
3539.589	Th	8	8	-	-	3537.452	W	12	12	-	-	3535.162	F II	-	-	[10]	Di
3539.542	Kr I	-	[15]	IHu	-	3537.445	U	5	12	-	-	3535.162	Zr I	10	-	-	-
3539.465	Mo	3	3	-	-	3537.437	Ce II	10	3	-	-	3535.161	Ce	3	-	-	-
3539.458	W II	3	7	-	-	3537.434	Th	4 d	3	-	-	3535.052	Ru	10	1	-	-
3539.376	Dy	18	2 h	-	-	3537.346	U	2	1 h	-	-	3535.046	Ce	8	-	-	-
3539.372	Nd	4	4	-	-	3537.31	Pr	7	2	-	-	3535.04	Mg II	8	-	-	Fl
3539.369	Ru I	60	15	-	-	3537.282	Er	6	-	-	-	3534.984	Ir I	10	-	-	-
3539.330	W	6	3	-	-	3537.276	Eu	4	-	-	-	3534.963	Dy	125	-	-	-
3539.329	Re	25	-	-	-	3537.275	Mo	15	15	-	-	3534.962	Er	20	9	-	-
3539.325	Th	5	5	-	-	3537.233	Cr	15	1	-	-	3534.93	Ho	-	4	-	Ex
3539.289	Er	3	-	-	-	3537.161	Th	10	10	-	-	3534.914	Fe I	5	2	-	-
3539.263	Ru	30	5	-	-	3537.15	Gd	2	2	-	-	3534.913	Sm II	10	-	-	-
3539.255	Sm II	8	1	-	-	3537.134	Ce	10	1	-	-	3534.90	Pr	5	2	-	-
3539.24	Eu	2	-	-	-	3537.11	Tb	15	3	Ed	-	3534.85	Tm	20	30	-	Me
3539.212	U	4	4	-	-	3537.09	Mo	-	50	-	-	3534.826	Re I	25	-	-	-
3539.200	Fe	1 h	1 h	-	-	3537.058	U	8	1	-	-	3534.773	Co I	5	-	-	-
3539.183	Nd	10	4	-	-	3536.944	Zr II	8	5	-	-	3534.742	Ce	5	-	-	-
3539.15	Al	-	8	Gn	-	3536.900	Sm	1	2	-	-	3534.733	V I	20	5	-	-
3539.116	Cb	1	15	-	-	3536.838	F II	-	[30]	Di	-	3534.688	Mo	10	25	-	-
3539.086	Ce II	100	10	-	-	3536.820	He I	-	[3]	Ps	-	3534.577	Ru	4	-	-	-
3539.006	Zr II	4	3	-	-	3536.803	U	1	4	-	-	3534.55	Er	15 d	2	-	-
3538.976	U	1	3	-	-	3536.765	Sm	5	3	-	-	3534.54	Nd	15 d	4	-	-
3538.97	Ho	4	-	Ex	-	3536.764	Er	2	-	-	-	3534.529	Th	5 d	2 d	-	-
3538.960	Ce	3	-	-	-	3536.70	Tl II	-	[6]	El	-	3534.529	Fe	4	2	-	-
3538.923	Mo	3	4	-	-	3536.696	Ce	10	2	-	-	3534.529	W	3	12 l	-	-
3538.90	Tb	15	3	Ed	-	3536.676	Nd	6	4	-	-	3534.527	Sm	10	-	-	-
3538.864	Sm II	10	1	-	-	3536.62	Tb	30	3	Ed	-	3534.52	Pr	25	4	-	-
3538.86	Mg II	8	-	Fl	-	3536.62	Hf	10	2	Me	-	3534.443	Dy	6	2	-	Ed
3538.858	Nd	20	6	-	-	3536.57	Tm	60	20	Me	-	3534.436	Ce	10	-	-	-
3538.85	Pr	9	2	-	-	3536.567	Ru	50	-	-	-	3534.425	Cb	3	2	-	-
3538.844	Th	4 d	-	-	-	3536.56	Dy	10	-	Ed	-	3534.346	Er	2	-	-	-
3538.795	Fe	1 h	-	-	-	3536.557	Fe I	300	200	-	-	3534.335	U	8	2	-	-
3538.792	Ce	3	2	-	-	3536.52	I	-	[5]	Bl	-	3534.224	Cb	1	15	-	-
3538.759	Co	5	2	-	-	3536.482	Ce	8	2	-	-	3534.21	Tb	8	3	-	Ed
3538.75	Th	-	50	Ex	-	3536.37	La II	3	3	Me	-	3534.2	Rn	-	-	[b]	Pe
3538.679	U	-	6 h	-	-	3536.32	Tb	15	8	Ed	-	3534.2	Al	-	-	15	Gn
3538.633	W	8	9	-	-	3536.300	Ta	20	2	-	-	3534.176	Nd	6	4 h	-	Kn
3538.550	Fe I	1 h	-	-	-	3536.29	P II	-	[30]	Gu	-	3534.174	W II	4	5	-	-
3538.530	Yt	10	3	-	-	3536.273	W	3	15	-	-	3534.14	Eu	7 w	2	-	-
3538.523	Dy	150	40	-	-	3536.225	Sm	-	2	-	-	3534.117	Cb	15	15 h	-	-
3538.52	Ho	-	6	Ex	-	3536.213	Cb	3	5 h	-	-	3534.065	U	1	6	-	-
3538.519	Er	18	9	-	-	3536.21	Tm	40	60	Me	-	3534.051	Ce	35	10	-	-
3538.50	Dy	5	2	Ed	-	3536.186	Fe I	40	10	-	-	3534.05	Dy	4	-	-	Ed
3538.50	Tb	3	3	Ed	-	3536.158	Re	8	-	-	-	3534.037	Cb	1	4 h	-	-
3538.474	F II	-	[6]	Di	-	3536.126	Mo	2	3	-	-	3533.913	Ru	6	-	-	-
3538.462	Ce	2	1	-	-	3536.077	U	1	2	-	-	3533.91	Pb	-	2	-	Sx
3538.445	Th	3 d	-	-	-	3536.051	Th	5	1	-	-	3533.88	Sb	1	10 Wh	-	-
3538.418	U	2	8	-	-	3536.041	V I	2	-	-	-	3533.868	Tl II	6	35	-	-
3538.415	Ce	2	1	-	-	3536.04	Ho	4	6	Ex	-	3533.86	Tb	30	8	-	Ed
3538.31	Pr	3	2	-	-	3536.024	Dy	125	10	-	-	3533.757	V II	20	40 h	-	-
3538.304	Ce	2	-	-	-	3536.023	Er	20 s	12	-	-	3533.749	Pr	20	5	-	-
3538.290	Fe	2 h	1 h	-	-	3536.006	Ce	2	-	-	-	3533.746	Co I	50	15	-	-
3538.273	Ag	10	2	-	-	3535.859	I	-	[7]	Ke	-	3533.716	Ce	5 w	3	-	-
3538.256	Rh I	50	4	-	-	3535.848	Pt II	-	10	-	-	3533.706	Th	5	3	-	-
3538.241	V II	10	100	-	-	3535.841	Mo	1	3	-	-	3533.70	Dy	6	2	-	Ed
3538.223	Th	8	3	-	-	3535.840	Ce	2	1	-	-	3533.679	Ce	4	-	-	-
3538.221	U	8	6	-	-	3535.836	U	6	2	-	-	3533.676	V I	40	10 h	-	-
3538.152	Ir	18	1 h	Ab	-	3535.831	Ru	60	12	-	-	3533.67	La II	-	3 h	-	Me
3538.142	Rh I	100	10	-	-	3535.787	Ir	12	10	-	-	3533.665	Cb	20	30	-	-
3538.09	Eu	20 w	10 h	-	-	3535.729	Sc II	15	30	-	-	3533.66	P II	-	[30]	-	Gu
3538.08	Xe II	-	[2]	Hu	-	3535.71	In	-	10 wh	-	-	3533.60	Tb	15	-	-	Ed
3537.99	Ne II	-	[7]	Bn	-	3535.689	Ce	3	1	-	-	3533.588	U	6	6	-	Kn
3537.988	Os	1	4	-	-	3535.687	Cd II	5	15	-	-	3533.568	U	10	20	-	-
3537.951	Ru I	70	25	-	-	3535.649	U	1 h	3 h	-	-	3533.564	Ce	12	3	-	-
3537.94	Tb	15	15	Ed	-	3535.633	Sm II	25	5	-	-	3533.48	Xe I	-	-	[2]	Me
3537.91	Tm	15	2	Me	-	3535.60	Dy	4	-	m	-	3533.441	Ce	-	-	2 h	-
3537.897	Fe I	50	25	-	-	3535.566	Ce	10	1	-	-	3533.408	Os	40	20	-	-
3537.895	Mn	12	-	-	-	3535.549	W	12	10	-	-	3533.364	Cs	-	-	[6]	Sv
3537.849	Ce	3	-	-	-	3535.545	Hf II	15	50	-	-	3533.36	I	-	-	[5]	Bl
3537.826	U	-	2	-	-	3535.534	Ca I	4	-	-	-	3533.358	Co I	200 w	-	-	-
3537.75	Eu	10	10 h	-	-	3535.520	Tm	80	25	Me	-	3533.217	Zr I	30	3	-	-
3537.733	Ca	3	4	-	-	3535.51	Pr	3	3	-	-	3533.202	Fe I	50	50	-	-
3537.731	Fe I	25	15	-	-	3535.481	U	6	-	-	-	3533.114	Ce	8	-	-	-
3537.726	Co I	2	-	-	-	3535.412	Tl II	15	125	-	-	3533.07	Mo	-	-	25 d	-
3537.673	Dy	9	-	-	-	3535.404	Ta	15	18 wh	-	-	3533.06	P II	-	-	[15]	Gu

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3533.010	U	—	4 h	—	—	3530.554	Co I	2	—	—	—	3527.947	Co I	3	—	—	—
3533.010	Na II	—	[200]	—	—	3530.54	Dy	6	4	Ed	—	3527.928	W	8	—	—	—
3533.010	Ca	2	4	—	—	3530.540	U	6	—	—	—	3527.91	Bi	—	2 h	—	—
3533.010	Fe	50	75	—	—	3530.497	Th	4 d	2 d	—	—	3527.878	Sm	—	2	—	—
3532.888	Cr	8	2	—	—	3530.487	He I	—	[5]	Pa	—	3527.87	Mo	1	30 d	—	—
3532.879	Ce II	10	1	—	—	3530.45	V	—	30	—	—	3527.87	Eu	20 w	5 w	—	—
3532.815	Pr	4	2	—	—	3530.403	Ce	3	—	—	—	3527.863	V	—	5	—	—
3532.814	Ru	60	12	—	—	3530.389	Fe I	50	25	—	—	3527.848	Ce II	15 s	2	—	—
3532.800	Os I	100	20	—	—	3530.386	Cu I	50	20	—	—	3527.797	Fe I	100	80	—	—
3532.781	U	4	8	—	—	3530.38	Tb	15	—	Ed	—	3527.641	Ir I	5	—	—	—
3532.70	Tb	30	8	Ed	—	3530.36	Eu	12 w	1	—	—	3527.631	U	2	1	—	—
3532.65	N	—	[15]	Du	—	3530.36	Er	6 w	1	—	—	3527.610	Ce II	8	2	—	—
3532.63	Hg	—	[200]	Ps	—	3530.35	Pb	—	5	Sx	—	3527.599	W	7	5	—	—
3532.608	Ce II	6	1	—	—	3530.24	P II	—	[70]	Gu	—	3527.529	Nd	20	10	—	—
3532.576	Fe	5	2	—	—	3530.223	Zr I	10	1	—	—	3527.482	Cu I	50	10	—	—
3532.55	Mo	—	10	—	—	3530.21	Xe II	—	[3 wh]	Hu	—	3527.45	Tb	8	3	Ed	—
3532.541	Sm	20	4	—	—	3530.137	Ce	4	2	—	—	3527.441	Ti	2	—	—	—
3532.530	Ob	3	5 h	—	—	3530.089	Cb	5	5	—	—	3527.436	Zr II	3	4	—	—
3532.46	Zr	8	—	Ks	—	3530.062	Os	100	20	—	—	3527.42	Kr	—	[3 hl]	Me	—
3532.44	Dy	6	2	m	—	3530.022	Ce II	18	3	—	—	3527.379	U	1	2	—	—
3532.390	Ce	4	1	—	—	3529.998	Sm	15	—	—	—	3527.350	Th	4 d	1	—	—
3532.3	Rn	—	[10]	Pe	—	3529.982	Zr II	2	6 hl	—	—	3527.310	Ce	2	2	—	—
3532.276	V	1	25 h	—	—	3529.967	Ca	2	3	—	—	3527.293	Cb	3 h	2 h	—	—
3532.267	Ir	12	3	—	—	3529.820	Fe	125	80	—	—	3527.209	Ce	2	—	—	—
3532.23	Eu	5	1	—	—	3529.816	Re	10	—	—	—	3527.133	Er	15 d	—	—	—
3532.208	Ta	15	2	—	—	3529.813	Co I	1000 R	30	—	—	3527.101	Cb	5	5	—	—
3532.121	Mn	50 h	30	—	—	3529.773	U	2	5	—	—	3527.10	P II	—	[30]	Gu	—
3532.06	Ir	2 d	—	—	—	3529.76	Tb	15	3	Ed	—	3527.091	Cr	30	5	—	—
3532.055	Ru	5	—	—	—	3529.74	Pr	5	2	—	—	3527.065	Ta	50	2 h	—	—
3532.051	U	1	2	—	—	3529.735	V I	20	2	—	—	3527.059	Sm	8	—	—	—
3532.008	Sm	5	—	—	—	3529.732	Ce	3	—	—	—	3527.031	Cb	—	3 h	—	—
3531.998	Mn	50 h	8	—	—	3529.7	Rn	—	[5]	Pe	—	3527.002	W II	10	12 l	—	—
3531.935	Th	4 d	3 d	—	—	3529.619	U	2	6	—	—	3526.909	Dy	4	1	—	—
3531.90	S	—	[5]	Hn	—	3529.611	Ru	3	—	—	—	3526.893	Sm II	10	3	—	—
3531.848	Mn	40 R	30 r	—	—	3529.563	W II	10	20	—	—	3526.893	I	—	[18]	Ke	—
3531.832	Eu	12	2	—	—	3529.537	Ce	5	2	—	—	3526.857	Hf	10	1 h	—	—
3531.798	Ir I	2	—	Ab	—	3529.532	Fe	2	—	—	—	3526.854	W	10	12	—	—
3531.794	Ru	8	1	—	—	3529.53	K II	—	[10]	Bn	—	3526.849	Co I	300 R	25	—	—
3531.74	Ho	10	20	Ex	—	3529.52	Dy	4	—	Ed	—	3526.813	Er	10 w	—	—	—
3531.714	Er	40	25	—	—	3529.495	Ba	4	—	Sz	—	3526.775	Sm	15	—	—	—
3531.712	Dy	100	100	—	—	3529.43	Ti I	1000	800	Fl	—	3526.77	La II	—	2 h	Me	—
3531.712	Nd	6	4	—	—	3529.391	Cb	3	5	—	—	3526.765	Ir	20	2	—	—
3531.71	Rn I	—	[5]	Rs	—	3529.34	Er	7 w	—	—	—	3526.764	Th	2 d	2	—	—
3531.707	Yt	7	—	—	—	3529.276	Ru	30	3	—	—	3526.735	Re	20	—	—	—
3531.70	Tb	15	50	Ed	—	3529.271	Ce	8	2	—	—	3526.73	Tb	15	—	Ed	—
3531.641	U	15	1	—	—	3529.212	Re	25	—	—	—	3526.70	Eu	12	1 h	—	—
3531.623	Pr	4	2	—	—	3529.19	Nd	8	2	—	—	3526.682	Ce	25	3	—	—
3531.602	Rb II	—	[100]	Rr	—	3529.077	U	3	3	—	—	3526.676	Fe I	80	50	—	—
3531.593	Ce	18	2	—	—	3529.055	Nd	10 d	—	—	—	3526.639	Th	5	1	—	—
3531.584	Ta	35	3	—	—	3529.041	Ce II	12	2	—	—	3526.61	Dy	4	2	m	—
3531.451	Th	4	1	—	—	3529.036	Dy	5	—	—	—	3526.600	U	3	8	—	—
3531.446	Fe I	3	1	—	—	3529.033	Co I	200 R	—	—	—	3526.575	Ru	12	3	—	—
3531.440	W	—	9	—	—	3528.947	Th	6	6	—	—	3526.540	Ni I	5	—	—	—
3531.39	Nd	4	1	—	—	3528.926	Dy	2	10	—	—	3526.537	Mo	2	3	—	—
3531.390	Ru	60	9	—	—	3528.896	Cb	2	40	—	—	3526.464	Fe I	20	10	—	—
3531.376	Cs	—	[4]	Sv	—	3528.891	Ni I	15	—	—	—	3526.383	Fe	20	10	—	—
3531.303	Mo	3	3	—	—	3528.824	Th	4	3	—	—	3526.35	Mo	2	3	—	—
3531.264	Er	12 l	1	—	—	3528.723	Pd I	10	—	—	—	3526.239	Th	4	4	—	—
3531.25	Yb	2	5	—	—	3528.71	Pr	3	2	m	—	3526.23	I	—	[5]	Ke	—
3531.227	Hf	5	3	—	—	3528.687	U	6	15	—	—	3526.169	Fe II	50	25	—	—
3531.22	A II	—	[3]	Rt	—	3528.683	Ru I	60	12	—	—	3526.13	Cl II	—	[30]	Ks	—
3531.14	Eu	10	10	—	—	3528.644	Ce	8	1	—	—	3526.042	Fe I	80	50	—	—
3531.129	Os	15	12	—	—	3528.614	Ta	35	18 W	—	—	3526.041	Ti	12	2	—	—
3531.113	U	8	20	—	—	3528.602	Os I	400 R	50	—	—	3526.035	Os	80	20	—	—
3531.09	Ca	—	2	Ad	—	3528.60	Eu	8 w	—	—	—	3526.01	Eu	4	—	—	—
3531.083	Cr	15	—	—	—	3528.549	Gd	10	10	—	—	3526.006	Ce	3	—	—	—
3531.021	W	7	7	—	—	3528.544	Pt	5	2 h	—	—	3525.987	Cb	—	15 h	—	—
3530.946	Ce	10	1	—	—	3528.51	K II	—	[2]	Bn	—	3525.94	Lu	2	—	Me	—
3530.88	Dy	4	—	Ed	—	3528.51	Dy	6	2	Ed	—	3525.939	Mo	5	3	—	—
3530.874	Hf	5	1	—	—	3528.495	W	5	10	—	—	3525.936	Ce	2	1	—	—
3530.869	V I	1	20	Me	—	3528.476	Cb	3	50	—	—	3525.885	Cb	3	5 h	—	—
3530.851	Zr II	5	5	—	—	3528.38	Rn I	—	[5]	Rs	—	3525.872	Co I	8 h	—	—	—
3530.837	Pr	9	2	—	—	3528.345	U	1	2	—	—	3525.847	U	3	8	—	—
3530.824	Cb	3	15	—	—	3528.307	Cb	10	1	—	—	3525.817	Ru I	5	—	—	—
3530.809	Mo	1	3	—	—	3528.212	V I	10	1 h	—	—	3525.814	Zr II	9	10	—	—
3530.773	V II	40	100	—	—	3528.19	Tm	5	10	Me	—	3525.784	Eu	9	5 h	—	—
3530.756	W	8	7	—	—	3528.151	Th	3 d	—	—	—	3525.770	V I	8	—	—	—
3530.739	Ir	10	2	—	—	3528.105	Cb	—	3	—	—	3525.751	Dy	12	—	—	—
3530.707	K II	—	[40]	Dm	—	3528.074	U	—	5	—	—	3525.742	W	1	12	—	—
3530.661	La II	15	6	—	—	3528.053	Ce II	10	1	—	—	3525.73	U	6 d	6 d	—	—
3530.64	Tb	8	—	Ed	—	3528.024	Rh I	1000 w	150	—	—	3525.658	Rh I	50	2	—	—
3530.635	Ce	10	—	—	—	3528.014	Ru	12	—	—	—	3525.653	Th	2 d	4	—	—
3530.598	Sm II	8	4	—	—	3527.982	Ni I	200	15	—	—	3525.644	Ru	5	1	—	—
3530.595	Ni I	30	—	—	—	3527.98	Dy	6	2	m	—	3525.61	Tb	50	8	Ed	—
3530.580	Ti I	15	1	—	—	3527.955	Cb	10	8	—	—	3525.496	Sm II	15	2	—	—

3525.4—3518.1 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3525.49	Pr	4	2	—	3522.893	Fe I	10	3	—	3520.711	La II	4	4	—
3525.4	bh Sr	8	—	L	3522.883	F II	—	[20]	Di	3520.6	Ti	—	3	Cx
3525.34	Br	—	[3]	Bl	3522.868	Dy	10	2	—	3520.543	V	1	20	—
3525.29	Os	4	5	—	3522.847	Co I	5	1	—	3520.522	Ce I, II	30	2	—
3525.232	Cb	15 w	30 w	—	3522.803	Sm	3	—	—	3520.495	Ta	25 wh	18	—
3525.161	Ti I	10	1	—	3522.797	Ce	2 w	1	—	3520.474	Sb II	—	[125]	Lg
3525.142	Th	2 d	1	—	3522.78	Cr I	8 wh	—	—	3520.472	Ne I	—	[1000]	IHu
3525.141	U	5	8	—	3522.70	Pr	3	2	m	3520.305	Zr I	2	—	—
3525.13	Tb	8	8	Ed	3522.700	Ca	—	3	—	3520.29	Yb	10	70	—
3525.089	Co I	2 h	—	—	3522.695	Ce	1	2	—	3520.253	Ti II	10	18	—
3525.065	Sm	2	—	—	3522.675	Kr I	—	[15]	IHu	3520.247	Ce	4	—	—
3524.985	Ba I	20	5	—	3522.605	Ce	1 h	2	—	3520.198	Mo	1	20	—
3524.981	Mo	5	5	—	3522.576	U	5	2 h	—	3520.16	Ho	8	10 h	Ex
3524.936	Cb	2	5	—	3522.569	V I	25	2	—	3520.14	Eu	4	4	—
3524.92	Dy	6	—	m	3522.524	Er	3	—	—	3520.130	Ru	60	40	—
3524.920	Er	20	8	—	3522.451	Ce	2	—	—	3520.100	Ce	2	1	—
3524.902	Ru I	12	2	—	3522.43	Tm	15	5	Me	3520.081	Co I	100 W	4	—
3524.87	Ti II	—	5	—	3522.371	Mo	5	3	—	3520.071	Sb	4	2 h	—
3524.715	V II	10	60	—	3522.367	Eu	18	—	—	3520.055	Cb	20	20	—
3524.681	W	7	5	—	3522.363	Cb	—	50 W	—	3520.034	Er	12	4	—
3524.646	Mo	5	50 h	—	3522.324	Re	3 w	—	—	3520.031	Cu I	30	10	—
3524.61	Dy	6	4	m	3522.276	Ru	10	8	r	3520.025	V II	5	50	—
3524.541	Ni I	1000 R	100 wh	—	3522.276	Fe I	50	30	—	3520.00	A	—	[15]	Rt
3524.540	Mn	15	—	—	3522.275	Dy	3	—	—	3519.998	Os	30	20	—
3524.538	Sm	10	—	—	3522.274	U	2	—	—	3519.956	U	6	12	—
3524.538	Zr I	9	2 h	—	3522.211	Ce	2	—	—	3519.939	Ti I	5	—	—
3524.47	Pr	3	2	—	3522.180	Zr I	3	2	—	3519.928	Ce	3	—	—
3524.454	Ru	—	6	—	3522.174	Re	8	—	—	3519.92	Ho	10	10 h	Ex
3524.372	Ir	2 h	—	—	3522.145	Cr	—	6	—	3519.818	Co	2 h	25 h	—
3524.34	Eu	3 w	1 h	—	3522.14	Cl II	—	[40]	Ks	3519.77	Nd	10 d	2	—
3524.277	I	—	[3 d]	Ke	3522.11	W	—	7	—	3519.770	Dy	2	1 h	—
3524.27	Hg I	—	[15]	Wd	3522.11	Pr	4	2	Ex	3519.766	Ni I	500 h	30	—
3524.246	W	9	8	—	3522.063	Mo	—	10	—	3519.76	Tb	50	15	Ed
3524.242	Zr	12	—	—	3522.044	Nd	12	8	—	3519.736	Ce	18	—	—
3524.241	Fe I	60	50	—	3522.036	U	1	5	—	3519.693	Th	3 d	6	—
3524.240	Ti	2	—	—	3522.028	Ir I	—	50	—	3519.65	Ho	—	4 h	Ex
3524.239	Cu I	40	10	—	3521.98	A II	—	[5]	Rt	3519.649	Cb	5	20	—
3524.228	Mo	8	3	—	3521.968	Ru I	8	5 r	—	3519.635	Ru	70	30	—
3524.198	Gd	25	15	—	3521.965	Os	15	10	—	3519.605	Zr I	100	10	—
3524.19	Hg II	—	[100]	Pa	3521.917	Th	10	10	—	3519.541	Rh I	40	2	—
3524.152	Ru	6	—	—	3521.909	W	10	8	—	3519.45	Cr	6 h	—	—
3524.073	Ce	8	—	—	3521.880	Ce	35	5	—	3519.334	Cb	2	3	—
3524.072	Cd II	—	8	—	3521.85	Dy	4	2	Ed	3519.24	Ti I	2000 R	1000 R	Fl
3524.071	Fe	50	40	—	3521.841	Fe I	50	20	—	3519.22	P II	—	[15]	Gu
3524.03	Dy	15	20	Ed	3521.839	V	20	80	—	3519.18	Bi	10	—	To
3524.008	Ce	8	—	—	3521.82	Tb	8	—	Ed	3519.176	Os	15	8	—
3523.983	Er	25	8	—	3521.771	Sb II	1	[10]	—	3519.167	V I	10	—	—
3523.97	Ho	—	4	Ex	3521.746	Re	5	—	—	3519.128	Pr	10	2	—
3523.89	Mo	—	10	—	3521.731	Co I	5	—	—	3519.094	Er	20 rh	2 rh	—
3523.735	Ce	5	—	—	3521.712	W	9	6	—	3519.077	Ce	25	4	—
3523.701	Co I	15	3	—	3521.602	Cb	—	10 h	—	3518.983	Ru	30	3	—
3523.67	Eu	2 w	1 h	—	3521.567	Co I	200 r	25	—	3518.96	Tb	15	—	Ed
3523.66	Tb	30	50	Ed	3521.558	Hf	3	2	—	3518.951	U	3	—	—
3523.636	Os	150	30	—	3521.535	Ce	2	—	—	3518.942	Os	20	5	—
3523.636	Zr I	5	1	—	3521.534	Yt I	7	—	—	3518.906	Ir I	2 h	—	Ab
3523.625	Nd	15	8	—	3521.521	Sm	6	—	—	3518.904	Eu	5	—	Kn
3523.613	Ce	2	2	—	3521.482	U	3	8 h	—	3518.894	Th	3 d	3	—
3523.59	Cr	10	1	—	3521.439	Rb II	—	[200]	Rr	3518.882	Fe I	10	2	—
3523.565	U	4	15	—	3521.413	Mo	8	3	—	3518.869	Zr	4	1 h	—
3523.557	Th	5 wh	1 wh	—	3521.390	Zr	2	—	—	3518.752	Hf II	5	15	—
3523.55	W	—	5	—	3521.331	Ce	2	—	—	3518.734	Ce	3	—	—
3523.51	Sr	1	2	Sd	3521.27	A	—	[10]	Rt	3518.725	Os	200	30	—
3523.50	Eu	15 w	—	—	3521.264	Fe I	300	200	S	3518.71	Dy	4	2	Ed
3523.444	Ni I	100	—	—	3521.262	Th	2	—	—	3518.706	Ca	—	2 h	—
3523.434	Co I	300 r	25	—	3521.18	Lu	3	—	Me	3518.685	Fe	7	1	—
3523.413	Sm	12	—	—	3521.179	Ce	2	—	—	3518.685	Th	3	—	—
3523.331	Ce	2	2	—	3521.175	Mo	3	10 w	—	3518.682	Sm	5	—	—
3523.316	Mo	4	3	—	3521.16	Ag I	5	2	Bx	3518.634	Ni I	90	8	—
3523.312	Fe	10	4	—	3521.16	Pd I	2	—	—	3518.60	P II	—	[50 h]	Gu
3523.22	Dy	4	—	Ed	3521.140	Cb	2	10 h	—	3518.570	Mo	1	3	—
3523.20	Tb	8	—	Ed	3521.13	Dy	15	6	m	3518.554	W II	—	5	—
3523.18	Eu	15 w	—	Kn	3521.128	Ce	2	1	—	3518.508	Pr	4	—	—
3523.171	Ta	15 h	15	—	3521.09	Eu	50	4 h	—	3518.495	Ce	3	—	—
3523.167	Os	10	5	—	3521.07	Te	—	[15]	Bl	3518.48	Eu	20	10	—
3523.154	Cb	5	10	—	3521.062	Th	3 d	1 d	—	3518.478	W	10	7	—
3523.114	Sm	8	8	—	3521.030	U	5	—	—	3518.475	U	2	—	—
3523.104	Ce	8	—	—	3520.976	Ce	5	1	—	3518.404	Th	6	2	—
3523.074	Ni I	5	—	—	3520.873	Zr II	9	4	—	3518.40	Cr	8	1	—
3523.050	Sm	8	8	—	3520.855	Fe	10	4	—	3518.38	Tb	8	—	Ed
3523.021	Hf	20	10	—	3520.793	U	6	10	—	3518.38	Hf II	—	3	Me
3523.00	Hg I	2	—	Wd	3520.79	Tb	15	8	Ed	3518.371	Ce	12	1	—
3522.991	Nd	2	2	—	3520.732	Er	20 r	—	—	3518.349	Co I	200 W	100	—
3522.980	Pr	2	—	—	3520.732	Re I	30	—	—	3518.304	Sm	1	2	—
3522.963	Ce	2	—	—	3520.721	Th	5	2	—	3518.221	Mo	6	15	—
3522.950	Cr	8	1	—	3520.715	Cb	3	5	—	3518.178	Cb	3	4	—

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3518.176	Er	20	8	-	3515.779	Ce II	8	1	-	3513.276	Hf	10	1	-
3518.172	Yb	6	30	-	3515.754	Re	3	-	-	3513.27	Pr	5	-	-
3518.15	Cs	-	[6]	Bs	3515.712	Th	5	4	-	3513.22	Cl II	-	[35]	Ks
3518.109	U	6	-	-	3515.689	Mo	-	6	-	3513.219	Th	3	3	-
3518.066	Sm II	8	1	-	3515.678	Ru I	10	8 r	-	3513.13	As	-	5	Ro
3518.040	Ce	8	1	-	3515.676	U	6	1 h	-	3513.102	Rh I	50	3	-
3517.906	Ce	5	1	-	3515.64	Dy	6	-	Ed	3513.10	Tb	30	8	Ed
3517.90	A	-	[3]	Rt	3515.637	Ce	8	-	-	3513.10	Dy	4	-	Ed
3517.90	Xe ⁺ I	-	[2]	Me	3515.63	Se	-	[35]	Bl	3513.065	Fe I	10	2	-
3517.894	Er	8	1	-	3515.58	Ho	40	40	Ex	3513.048	Sm	15 d	4	-
3517.855	Zr	2	-	-	3515.575	Er	25 w	5 w	-	3513.048	Ce	1	2	-
3517.81	Tb	8	-	Ed	3515.549	Be I	30	-	-	3513.044	Cr	-	8	-
3517.761	Cb	5	1	-	3515.546	Ce	2	-	-	3513.039	U	6	6	-
3517.671	Cb	2	200	-	3515.448	U	4	-	-	3513.038	Tm	10	20	Me
3517.642	U	1	12	-	3515.44	Tb	15	3	Ed	3512.988	Os	-	30	-
3517.60	Tm	7	-	Me	3515.423	Cb	20	300	-	3512.958	Fe	2	1	-
3517.58	Dy	4	-	Ps	3515.390	Ce	2	-	-	3512.93	W	5	7	-
3517.566	In II	-	[5]	-	3515.285	Ce	4	-	-	3512.917	La II	50	15	-
3517.557	Mo	2	20	-	3515.244	Zr I	3	-	-	3512.909	Sm II	6 d	3	-
3517.505	W	10	8	-	3515.235	U	3	10	-	3512.909	Nd	8	10	-
3517.475	Zr I	5	-	-	3515.191	Ne I	-	[150]	IHu	3512.887	U	8	1	-
3517.46	W	-	4 d	-	3515.11	Zn I	2 h	-	-	3512.886	Yt I	8	3	-
3517.457	U	1	5	-	3515.07	W	1	9	-	3512.882	Ru	8	-	-
3517.448	Ta	3	1 h	-	3515.054	Ni I	1000 R	50 h	-	3512.834	Ta	15	-	-
3517.446	Co II	2	10	-	3515.053	Dy	3	1	-	3512.772	Er	2	-	-
3517.407	Ru	10	-	-	3515.053	Mo	-	6	-	3512.756	Cb	3	2	-
3517.380	Ce	40	6	-	3515.04	Tb	30	8	Ed	3512.746	Th	5	6	-
3517.37	Kr II	-	[5 hs]	Me	3515.003	Re	2	-	-	3512.707	Dy	12	-	-
3517.327	He I	-	[2]	Ps	3514.966	Ce	2	-	-	3512.701	I	-	[18]	Ke
3517.326	Re	50	-	-	3514.966	Th	4	4	-	3512.695	Er	9	1	-
3517.301	V	20	30 WR	-	3514.894	Er	15	5	-	3512.684	Zr II	5	3 h	-
3517.292	Os	15	10	-	3514.87	La II	3	2	Me	3512.673	U	1	5	-
3517.270	Dy	70	4	-	3514.802	Ce	2	1	-	3512.65	Cr	8 h	-	-
3517.21	Ga	-	3	Kl	3514.8	bh Ca	4	-	L	3512.650	Sm	15	3	-
3517.164	Os	8	8	-	3514.8	Ra II	-	[5]	Rs	3512.641	Co I	400 R	100	-
3517.11	La	-	25 h	Kn	3514.80	Dy	2	-	m	3512.619	W	7	5	-
3517.106	Cb	1	8	-	3514.782	Mo	4	3	-	3512.60	Tb	15	3	Ed
3517.052	U	4	8	-	3514.766	Ru I	12	4	-	3512.566	Ce	5	-	-
3517.039	Co I	20	3 h	-	3514.715	Pt	2	2	-	3512.563	Dy	10	-	-
3517.035	Sm	-	3 h	-	3514.641	Zr II	3	2	-	3512.511	Gd	30	30	-
3517.015	Yb	25 w	-	-	3514.626	Fe	7	2	-	3512.511	He I	-	[4]	Ps
3516.99	Er	20 w	2	-	3514.615	U	18	5	-	3512.355	Zr I	4	-	-
3516.973	Ce	1	3 h	-	3514.60	Rn I	-	[12]	Rs	3512.309	Cb	3	2	-
3516.96	Dy	4	-	Ed	3514.58	Xe	-	[4 wh]	Hu	3512.287	Re I	50	-	-
3516.943	Pd I	1000 R	500 R	-	3514.529	Th	8	8	-	3512.272	Ce	6	-	-
3516.92	W	-	7	-	3514.49	Eu	18	5	-	3512.27	Eu	10 W	-	-
3516.899	Nd	10	-	Kn	3514.488	Ru I	70	40	-	3512.227	Gd	30	20	-
3516.857	Cb	2	10	-	3514.43	Dy	6	-	Ed	3512.227	Fe	5	1	-
3516.854	U	6	15	-	3514.420	V	1	40	-	3512.22	Pr	3 d	-	-
3516.838	Ti I	12	1	-	3514.404	Ta	5	1 h	-	3512.200	Ir I	12	5	-
3516.825	Th	5	5	-	3514.39	A	-	[125]	Rt	3512.150	I	-	[10]	Ke
3516.776	W	7	3	-	3514.328	Ce	6	-	-	3512.130	V	-	10	Me
3516.71	Er	5	-	-	3514.322	Zr I	2	-	-	3512.121	Cu I	50	30	-
3516.675	Co I	2	-	-	3514.22	Eu	15	-	-	3512.093	W	-	10	-
3516.648	Re	60	-	-	3514.213	Co II	-	20	-	3512.08	Fe	1	-	-
3516.64	Tb	15	-	Ed	3514.18	Th	8	-	Ed	3512.075	Ti	2	-	-
3516.630	Os	20	20	-	3514.16	W	-	10	-	3512.040	Nd	20	-	-
3516.567	Th	2	1	-	3514.141	Ru	4	-	-	3511.98	Dy	4	-	Ed
3516.558	Fe	30	4	-	3514.10	Dy	4	2	m	3511.9	bh Zr	2	-	-
3516.53	Rb II	-	[5]	Ok	3514.063	La I	8	3	-	3511.896	Kr I	-	[4]	IHu
3516.520	Er	8	-	-	3514.044	Cb	-	50	-	3511.893	Ir I	20	7	-
3516.51	I II	-	[5]	Ke	3514.022	Cs	-	[6]	Sv	3511.88	Hf II	5	10	Me
3516.48	Dy	4	-	Ed	3513.933	Ni I	200	40 h	-	3511.85	Eu	25 w	1	-
3516.420	Fe	40	15	-	3513.88	Rb II	-	[10]	Ok	3511.849	U	5	8	-
3516.418	Co I	2	-	-	3513.877	V	-	30 h	Me	3511.836	Cr II	20	50	-
3516.357	Th	5	5	-	3513.86	Tb	30	-	Ed	3511.833	Mn	4	4	-
3516.32	F	-	[3 I]	Di	3513.856	Ce	8	-	-	3511.793	Mo	1	3	-
3516.234	Ni I	5 wh	-	-	3513.84	Dy	4	-	m	3511.785	Rh I	50	3	-
3516.22	W	-	8	-	3513.822	Os	10	3	-	3511.76	Ho	-	4	Ex
3516.206	Ce	2	-	-	3513.820	Fe I	400	300	S	3511.741	Fe	2	1	-
3516.198	Cb	3	5	-	3513.80	Ti II	-	[3]	El	3511.732	W	6	8	-
3516.186	Ru	3	-	-	3513.790	Ce	6	-	-	3511.694	Dy	10	2	-
3516.154	Re	2	-	-	3513.758	Th	3	3	-	3511.689	Er	9	-	-
3516.15	P	-	[70]	Gu	3513.708	Mo	3	1	-	3511.674	Th	10	8	-
3516.15	Dy	6	-	Ed	3513.69	Cl II	-	[12]	Ks	3511.626	Ti I	10	-	-
3516.14	Tb	15	3	Ed	3513.678	U	10	1	-	3511.615	Th	10	8	-
3516.03	Cs	-	[4]	Bs	3513.66	Gd	4	-	-	3511.590	Sm II	1	2	-
3516.023	I	-	[10]	Ke	3513.645	Ir I	100 h	100	-	3511.589	Ce	8	1	-
3516.012	V II	-	10	-	3513.612	Ta	35	1 h	-	3511.581	U	6	10	-
3516.003	Er	10	1	-	3513.484	Ni	3	-	-	3511.560	Ru I	6	-	-
3515.962	W	7 d	6 d	-	3513.480	Co I	300 R	25	-	3511.538	Rh I	25	2	-
3515.949	Ir I	35	15	-	3513.475	Ce	4	-	-	3511.459	Ce	2	2	-
3515.936	Ce	5	-	-	3513.370	U	3	10	-	3511.439	U	10	1	-
3515.894	Ru	10	8 r	-	3513.34	Eu	10 w	-	-	3511.436	Pr	15	3	-
3515.8	bh Zr	2	-	L	3513.283	Ce	6	-	-	3511.422	V	-	7	Me

3511.4—3505.0 A.

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
		Arc	Spk., [Dis.]			Arc	Spk., [Dis.]			Arc	Spk., [Dis.]
3511.413	Ce	2	-	3509.23	Mo	-	3	3507.287	Mo	3	3
3511.40	Dy	4	2	3509.201	Ru	10	100	3507.284	W	10	9
3511.347	I	-	[3]	3509.197	Th	-	2 d	3507.223	Ir I	2	-
3511.275	W	-	10	3509.17	Tb	200	200	3507.221	Ce	5	-
3511.225	Os	30	12	3509.132	Fe I	2	-	3507.209	Cr	12 h	-
3511.213	Sm II	5	5	3509.122	U	1	2	3507.170	Fe	3 h	1 h
3511.191	Cb	5	5	3509.117	Sm	8	10	3507.14	Tb	15	-
3511.19	Rb	-	[60]	3509.113	Th	4	1 d	3507.108	Sm	15	2
3511.188	Yt I	8	3	3509.061	Ce	2	-	3507.051	U	10	5
3511.18	Eu	4 w	1	3509.041	V	2	150	3507.049	Os	10	5
3511.157	Cb	50	1	3509.015	W	7	-	3507.024	Mo	3	2
3511.156	Th	5	-	3509.00	Dy	6	4	3507.015	Ce	2	-
3511.15	A	-	[3]	3508.94	Cl II	-	[12]	3506.994	Cb	10	10
3511.145	U	6	-	3508.938	Er	5	-	3506.94	Ho	10	10
3511.136	Ce	3	1	3508.88	Xe II	-	[10]	3506.94	Te	-	[5]
3511.126	Ru I	8	-	3508.865	Ce	2	-	3506.873	Ta	3	1
3511.07	Eu	30 w	-	3508.859	Eu	10	1	3506.854	Th	6	6
3511.043	Ta	100	35 w	3508.851	Os	8	10	3506.847	Sm II	4	2
3511.04	Tb	15	3	3508.846	U	8	10	3506.843	V I	15	4
3511.00	Dy	6	2	3508.836	Cr	12 h	1 h	3506.820	Dy	80	-
3510.998	U	1	2	3508.811	Er	8	-	3506.815	Er	15	6
3510.894	Re	15	-	3508.740	Eu	8	-	3506.790	U	6	10
3510.853	Bi I	200 wh	30	3508.735	W	9	10	3506.74	Xe I	-	[5]
3510.841	Ti II	40	125	3508.719	Ir I	2	-	3506.726	Ce	8	-
3510.84	Ca	2	4	3508.711	Ce	12	2	3506.722	Nd	2	-
3510.804	U	5	12	3508.706	Sm	3	2	3506.704	Mo	-	20
3510.780	Mo	4	6	3508.602	Rh I	3	-	3506.66	Kr I	-	[3]
3510.779	Ce	3	-	3508.60	Tb	8	-	3506.643	Ti I	35	3
3510.75	Ho	-	4	3508.576	Ir I	6	1	3506.641	W	8	7
3510.732	Th	5	4	3508.537	Cb	5	5 h	3506.564	V	-	-
3510.721	Ne I	-	[50]	3508.535	Fe I	20	10	3506.56	Xe II	-	[8]
3510.694	Nd	10	2	3508.51	Rh	2	-	3506.498	Fe I	50	30
3510.688	Ce	12	1	3508.485	Fe	40	20	3506.491	Yt	2	2
3510.68	Hg II	-	[10]	3508.476	Mo	2	5	3506.485	Zr II	6	2
3510.642	Ir I	20	10	3508.467	Ce II	10	-	3506.464	Ce	2	-
3510.596	Sm	-	2	3508.42	Lu	30	3	3506.46	A I	-	[30]
3510.540	Th	5	4	3508.42	Xe I	-	[2]	3506.392	Re I	15	-
3510.538	Cr	40	8	3508.395	Er	15	6	3506.319	U	2	-
3510.521	Yt I	8	1	3508.35	Ho	-	4 h	3506.315	Co I	400 R	15
3510.509	U	10	-	3508.335	Ce	4	-	3506.282	Ca	-	2 h
3510.457	Zr II	12	5	3508.306	U	2	-	3506.252	Ce	15	1
3510.446	Fe I	15	8	3508.22	Rn I	-	[10]	3506.2	bh Zr	20	-
3510.426	Ce	3	-	3508.213	Fe II	1 h	1 h	3506.046	Zr II	8	4
3510.405	Pr	5	2	3508.212	Pr	12	3	3506.028	Nd	6 d	-
3510.346	Zr I	2	-	3508.2	bh Zr	20	-	3506.025	Cb	3	3
3510.338	U	6	-	3508.115	Mo	20	20	3505.97	Eu	10 w	1
3510.338	Ni I	900 R	50 h	3508.115	W	5	1	3505.955	Ce	4	-
3510.311	Ru	6	-	3508.098	Cr	15	2	3505.901	Ti II	2	8
3510.293	Ce	5	-	3508.09	Ag I	10	1	3505.90	Tb	30	8
3510.266	V	-	10	3508.031	Ce	3	-	3505.83	Dy	20	2
3510.257	Cb	15	200	3507.964	Yt II	2	12	3505.808	Cb	5	2
3510.220	Ce	8	1	3507.960	Cb	20	20	3505.763	F	-	[10]
3510.151	Sm	2	1	3507.95	Pd II	-	30 h	3505.690	V I	50	35
3510.10	Tb	50	8	3507.945	Ce II	12	3	3505.688	Ce	3	-
3510.088	Dy	2	1	3507.925	W	6	6	3505.686	Er	8	-
3510.07	Eu	4	-	3507.90	La	-	4 hl	3505.669	Zr II	40	30
3510.032	W	10 s	10	3507.84	Kr I	-	[3]	3505.627	Cb	3	5
3509.989	La II	10	10	3507.835	Yb	12	60	3505.614	F II	-	[600]
3509.986	Mo	1	3	3507.811	Ce	5	-	3505.552	U	8	-
3509.934	Ce	8	-	3507.8	Rn	-	[5]	3505.530	Cl	-	[4]
3509.868	Fe I	15	4	3507.706	U	3	4	3505.520	Gd	60	60
3509.858	U	2	-	3507.698	Sm	4	-	3505.508	F II	-	[20]
3509.844	Ti II	8	20	3507.694	Ni I	100	12	3505.507	Ce	2	-
3509.843	Co I	400 R	40	3507.683	U	3	4	3505.498	Th	6	6
3509.801	Sm	3	1	3507.674	Zr II	5	3	3505.485	Zr II	30	30
3509.8	Rn	-	[5]	3507.644	Er	7	-	3505.457	Ce	2	-
3509.78	A	-	[15]	3507.55	Eu	8 w	5 wh	3505.457	Dy	70	2
3509.76	Tb	8	-	3507.539	V	-	50	3505.455	U	4	6
3509.729	Ce	12	-	3507.53	Dy	6	-	3505.44	Cl II	-	[12]
3509.717	Ru I	50	2	3507.528	Ce	2	-	3505.42	Ho	-	4
3509.684	V	-	6	3507.522	Th	-	10	3505.409	Rh I	30	3
3509.669	W	8	6	3507.506	Ir	1	2	3505.315	Mo	10	20
3509.668	U	10	15	3507.480	Er	20	4	3505.305	Eu	25 w	5 w
3509.531	Ce	3	-	3507.47	Lu	30	-	3505.297	Nd	15	6
3509.447	Sm	4	4	3507.45	Tb	50	8	3505.228	Zr	3 h	-
3509.41	Dy	6	2	3507.426	Ti	15	2	3505.227	Hf II	20	50
3509.39	Cl II	-	[40]	3507.397	Fe II	2	1	3505.181	Ce	8	-
3509.381	W	-	12	3507.39	Lu	100	150	3505.175	Ta	35	2 h
3509.35	Ho	6	2	3507.38	Cu I	3	2 h	3505.15	Ph	-	5
3509.349	U	3	6	3507.36	P II	-	[100 w]	3505.136	Cb	8	-
3509.323	Zr I	40	5	3507.345	Ce	8	-	3505.09	Tb	15	3
3509.313	Ce	3	2	3507.344	U	10	3	3505.074	U	8	15
3509.254	Co II	10	2	3507.34	Pr	6	2	3505.074	Er	12	8
3509.241	Ir I	8	2	3507.333	Ta	3	1 h	3505.061	Fe	10	10
3509.235	Nd	10 d	-	3507.316	Rh I	500	125	3505.06	Eu	2	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3505.014	Os	—	5 h	—	—	3502.978	Ce	5	—	—	—	3500.567	Fe	50	20	—	—
3504.976	Ta	70	2	—	—	3502.954	F II	—	—	[60]	DI	3500.552	Th	6	5	—	—
3504.936	U	8	—	—	—	3502.936	Ir I	8	4	—	—	3500.50	Dy	2	4	m	—
3504.91	Eu	4 W	—	—	—	3502.889	Ce II	8 s	—	—	—	3500.498	Sm II	30	15	—	—
3504.892	Ti II	20	150	—	—	3502.869	Ta	7	3	—	—	3500.36	Xe II	—	[15]	Hu	—
3504.866	Ir	2	—	—	—	3502.859	F II	—	—	[10]	DI	3500.346	V I	2	2	—	—
3504.859	Fe I	10	5	—	—	3502.81	Eu	15 d	5	—	—	3500.340	Ti II	15	35	—	—
3504.85	Cs	—	[4]	Bs	—	3502.783	Er	10	1	—	—	3500.333	U	3	10	—	—
3504.783	Pr	5	2	—	—	3502.783	Th	8	8	—	—	3500.328	Pr	6	—	—	—
3504.773	Ti I	2	—	—	—	3502.75	I	—	—	[10]	BI	3500.324	Cu I	20	2 h	—	—
3504.732	Co I	18	2	—	—	3502.731	Re	20	—	—	—	3500.318	Pt	2 h	—	—	—
3504.661	U	1	3	—	—	3502.705	Nd	8 d	4	—	—	3500.280	W	10	10	—	—
3504.659	Os I	300	20	—	—	3502.673	Mo	—	20	m	—	3500.27	Tb	50	—	Ed	—
3504.646	W	9 s	6	—	—	3502.646	Ce II	8	—	—	—	3500.269	Th	2	2	—	—
3504.606	Ce	5	10 wh	—	—	3502.635	Fe	2	—	—	—	3500.26	Ca	—	3	Ad	—
3504.522	Dy	90	3	—	—	3502.624	Co I	60	5	—	—	3500.230	Ir	5	—	—	—
3504.521	Ce	6	—	—	—	3502.616	Ir I	2	—	—	Ab	3500.146	Zr II	4	3	—	—
3504.518	Er	25	4 h	—	—	3502.6	Rn	—	—	[2]	Pe	3500.107	Cb	5	1	—	—
3504.50	P	—	[15]	Gu	—	3502.595	Ni I	100	—	—	—	3500.077	U	15	2	—	—
3504.496	Pr	4	1	—	—	3502.554	Kr I	—	—	[20]	IHu	3500.02	Tb	8	3	Ed	—
3504.484	U	8	2	—	—	3502.524	Rh I	1000	150	—	—	3500.0	Cd I	25	15	—	—
3504.469	Sb	20	18	—	—	3502.495	Ta	7	2 h	—	—	3499.996	Th	8	8	—	—
3504.439	V II	60	200	—	—	3502.49	Tb	15	—	—	Ed	3499.994	Ce	15	1	—	—
3504.415	W	3	1 h	—	—	3502.46	Eu	10 w	2	—	—	3499.985	Mo	—	25	—	—
3504.413	Mo	20	20	—	—	3502.418	Ru I	20	4	—	—	3499.97	Nd	8	4	—	—
3504.30	As II	—	5	Ro	—	3502.381	He I	—	—	[2]	Ps	3499.965	Tm	10	—	Me	—
3504.27	Sr I	4	—	—	Hp	3502.307	Cr	35	6	—	—	3499.965	Ir	9	—	—	—
3504.270	Pr	12	3	—	—	3502.306	Zr	5	—	—	—	3499.949	Cb	5	50	—	—
3504.236	U	4	—	—	—	3502.280	Mn	2 h	—	—	—	3499.877	Fe II	2 h	2 h	—	—
3504.215	Nd	6	20	—	—	3502.279	Co I	2000 R	20	—	—	3499.825	Sm	8	5	—	—
3504.212	Sm	2	5	—	—	3502.239	U	5	—	—	—	3499.824	V II	3	50	—	—
3504.2	Bi II	—	3	MI	—	3502.23	W	—	10	—	—	3499.82	Dy	5	—	m	—
3504.149	Ce	5	—	—	—	3502.10	Tb	8	—	—	Ed	3499.777	Ce	3	—	—	—
3504.124	Ir I	5	—	—	—	3502.09	Dy	6	4	m	—	3499.764	Ir I	3	—	—	—
3504.090	Ce	5	3	—	—	3502.02	Ca	—	3	Ad	—	3499.672	Sr I	50	—	ISn	—
3504.077	Nd	10 d	5	—	—	3502.01	Nd	8	4	—	—	3499.627	W	9	9	—	—
3504.06	Er	10 d	1	—	—	3501.974	Ta	3	1	—	—	3499.622	Ce	5	—	—	—
3504.04	Tb	15	3	Ed	—	3501.963	Mo	—	30	—	—	3499.61	Si	—	2	Sy	—
3504.039	Th	4	3	—	—	3501.96	Yt I	3	2	m	—	3499.61	Dy	4	—	—	—
3504.008	U	10	1	—	—	3501.943	Ag	5	2	Fn	—	3499.576	Zr II	10	9	—	—
3503.981	Ce II	5	—	—	—	3501.9	Pb II	—	—	[10]	Ea	3499.568	Pr	10	4	—	—
3503.955	Ce	4	—	—	—	3501.869	Dy	4	1	—	—	3499.535	Os	10	3	—	—
3503.925	Zr	4 h	—	—	—	3501.815	Ce	8	—	—	—	3499.49	A	—	[10]	Rt	—
3503.898	Kr I	—	[15]	IHu	—	3501.77	Xe	—	—	[10 h]	Hu	3499.466	Ce	2	—	—	—
3503.876	Cr	20 wh	—	—	—	3501.725	Co II	5	100	m	—	3499.388	Ce	4	—	—	—
3503.868	Ta	70	10 h	—	—	3501.687	Os	30	5	—	—	3499.368	Ir I	2	—	—	—
3503.8	bh Sr	30	—	L	—	3501.68	Ag	8 h	20 h	—	—	3499.34	Tb	15	—	Ed	—
3503.781	Th	3	—	—	—	3501.649	U	4	2	—	—	3499.327	U	6	15	—	—
3503.78	S	—	[8 h]	BI	—	3501.594	Ce	12	—	—	—	3499.300	Ce	4	—	—	—
3503.760	Ti I	7	—	—	—	3501.562	F II	—	—	[15]	DI	3499.266	Os	3	2	—	—
3503.75	Eu	8 d	—	—	—	3501.535	Nd	10 d	4	—	—	3499.199	Mo	3	—	—	—
3503.748	Zr	3	—	—	—	3501.529	Cu I	2 h	1 h	—	—	3499.112	Ir I	5	—	—	—
3503.718	Re	15 W	—	—	—	3501.52	Se I	—	—	[50]	Rd	3499.104	Er	18	15	—	—
3503.717	Co	5	—	—	—	3501.494	Zr I	12	3	—	—	3499.099	Ti I	25	10	—	—
3503.67	Cs	—	[4]	Sv	—	3501.487	F II	—	—	[6]	DI	3499.088	Pr	40	3	—	—
3503.66	Dy	4	2	m	—	3501.485	V I	25	20	—	—	3499.08	Ho	10	10	Ex	—
3503.634	Ce	4	—	—	—	3501.457	Th	10	10	—	—	3499.071	U	6	8	—	—
3503.620	Th	8	8	—	—	3501.453	Ce I, II	18 w	3	—	—	3499.071	Mo	—	20	—	—
3503.61	Ne II	—	[18]	Bn	—	3501.436	Dy	10	3	—	—	3498.986	Th	8	8	—	—
3503.56	Al	—	2	Gn	—	3501.416	F II	—	—	[200]	DI	3498.985	Hf	6	—	—	—
3503.558	W	9	5	—	—	3501.354	Ru	30	3	—	—	3498.951	Ir	25	—	—	—
3503.534	Ce	4	—	—	—	3501.347	Zr I	15	1	—	—	3498.943	Yt I	8	6	—	—
3503.502	Mo	3	3	—	—	3501.341	Cb	3	30	—	—	3498.942	Ru I	500 R	200	—	—
3503.474	Fe II	1 h	1 h	—	—	3501.34	U	5 d	3 d	—	—	3498.939	Dy	15	—	—	—
3503.451	Os	15	8	—	—	3501.339	Ce	4	—	—	—	3498.924	Ce	2	—	—	—
3503.430	Pr	10	2	—	—	3501.338	Cu I	5	1 h	—	—	3498.923	Mo	3	1	—	—
3503.390	Cr	8	—	—	—	3501.228	Sm II	2	1	—	—	3498.92	Kr II	—	[2 wh]	Me	—
3503.373	Er	10	1	—	—	3501.217	Ne I	—	—	[150]	IHu	3498.912	Sc I	8	2	—	—
3503.324	U	2	—	—	—	3501.19	Tb	8	—	—	—	3498.87	Ho	8	10	Ex	—
3503.318	Zr I	2	—	—	—	3501.162	Os	100	15	—	—	3498.826	Ce	2	—	—	—
3503.291	Sm	20	—	—	—	3501.144	Er	9	—	—	—	3498.758	Fe	1 h	—	—	—
3503.25	Kr II	—	[50 wh]	Me	—	3501.116	Ba I	1000	20	—	—	3498.737	Ir	15	—	—	—
3503.234	W II	—	5	—	—	3501.031	Ce	5	—	—	—	3498.73	Tb	8	—	Ed	—
3503.232	Eu	5	—	—	—	3501.005	U	8	—	—	—	3498.730	Rh I	50	60	—	—
3503.200	Cb	10	5	—	—	3500.864	Fe	2	—	—	—	3498.711	Er	10	3	—	—
3503.179	Dy	8	3 h	—	—	3500.852	Mn	5	—	—	—	3498.679	Ce	15	—	—	—
3503.176	V	10	4	—	—	3500.852	Ni I	500 wh	80	—	—	3498.67	Dy	50	50	m	—
3503.15	Xe II	—	[8]	Hu	—	3500.851	Th	5	3	—	—	3498.641	He I	—	[3]	Ps	—
3503.095	F II	—	[400]	DI	—	3500.84	Tb	70	15	—	Ed	3498.629	Cb	30	50	—	—
3503.085	Ce	10	—	—	—	3500.834	Ce	4	—	—	—	3498.625	Th	6	3	—	—
3503.060	Pr	15	4	—	—	3500.824	V I	35	25	—	—	3498.600	U	2	4	—	—
3503.059	Re I	80	—	—	—	3500.741	Cb	—	30 h	—	—	3498.562	Ce	8	—	—	—
3503.041	U	2	1	—	—	3500.680	Ce	18	—	—	—	3498.536	Os	80	15	—	—
3503.038	W	8	7	—	—	3500.639	Yt I	5	—	—	—	3498.50	Kr II	—	[4 wh]	Me	—
3502.99	P II	—	[70]	Gu	—	3500.6	Rn	—	—	[2]	Pe	3498.456	Sb II	—	300 wh	—	—

3498.4—3490.2 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3498.434	Cb	2	1	—	3495.598	U	6	2	—	3492.825	Mo	3	4	—
3498.384	U	8	3	—	3495.559	Cr	—	15	—	3492.799	U	2	10	—
3498.200	V I	12	7	—	3495.48	Nd	4	2	—	3492.775	Sm	3	3	—
3498.17	Pt I	1	2	—	3495.478	Ce	10	—	—	3492.77	Hg	—	[50]	Ps
3498.150	W	—	10	—	3495.375	Cr II	12	35	—	3492.765	Rb	—	[300]	Rr
3498.074	Os	15	10	—	3495.374	Zr I	3	—	—	3492.73	Pr	4	2	—
3498.064	Ne I	—	[75]	IHu	3495.36	Tb	30	8	Ed	3492.683	Th	2	1	—
3498.063	Cu I	20	5	—	3495.34	Cd	—	[100]	—	3492.622	Sm II	8	1	—
3498.06	Tb	15	—	Ed	3495.289	Fe I	100	60	—	3492.59	Tm	20	10	Me
3498.028	I	—	[25]	Ke	3495.246	W	12	20 I	—	3492.56	Tb	15	8	Ed
3498.016	Th	8	8	—	3495.20	Tm	6	15	Me	3492.559	Ce	3	—	—
3497.937	Ru I	30	5	—	3495.155	Eu	18 ws	2	—	3492.543	Er	25 d	2 d	—
3497.919	Zr II	—	10	—	3495.007	Ce	15	—	—	3492.52	Dy	2	1	—
3497.848	Ta	70	5	—	3494.967	Cr	35	25	—	3492.5	Ti II	—	35 wh	RI
3497.843	Fe I	200	200	S	3494.93	Tb	8	—	Ed	3492.486	Ce	5	—	—
3497.841	Dy	30	3	—	3494.863	Ce	3	—	—	3492.334	U	8	1	—
3497.812	Cb	30	15	—	3494.838	U	6	15	—	3492.260	W	4	—	—
3497.70	Th	3	3	—	3494.826	Sm	5	—	—	3492.249	Ce	12	—	—
3497.65	Eu	9 w	—	—	3494.815	Er	20	3	—	3492.207	U	2	8	—
3497.622	U	6	12	—	3494.78	Dy	2	—	—	3492.100	Ru	6	—	—
3497.538	Mn II	15	150	—	3494.77	Ho	30	40	Ex	3492.060	Ir I	2	—	—
3497.491	Hf	20	10	—	3494.755	W	6	3	—	3492.058	W II	2 d	12	—
3497.45	Kr II	—	[3 h]	Me	3494.727	Re I	20	—	—	3492.0	bh Zr	30	—	L
3497.444	Ce	2	—	—	3494.7	bh Ca	8	—	L	3491.987	Co I	10	—	—
3497.394	V	—	12	—	3494.672	Fe II	—	3	Do	3491.98	air	—	6	Sq
3497.377	I II	—	[7]	Ke	3494.648	Ce	10	—	—	3491.967	Gd	50	25	—
3497.340	S	—	[100]	Hn	3494.624	Ir	5	2	—	3491.942	Pr	10	2	—
3497.309	Ce	15	—	—	3494.557	U	6	—	—	3491.92	Lu	—	3 h	Me
3497.265	U	6	4	—	3494.522	Cr II	1	2	—	3491.901	Th	3	—	—
3497.264	Th	6	5	—	3494.496	Dy	100	5	—	3491.892	Cb	1	15	—
3497.25	Nd	10	6	—	3494.494	Er	15	9	—	3491.871	Mo	3	3	—
3497.160	Hf	10	4	—	3494.459	Zr I	4	—	—	3491.834	W	9	4	—
3497.111	Dy	3	3	—	3494.442	Rh I	50	3	—	3491.80	Al	—	2	Gn
3497.108	Fe I	200	100	—	3494.44	Tb	30	8	Ed	3491.8	bh Zr	20	—	L
3497.067	U	3	3	—	3494.418	Gd	70	60	—	3491.768	Mo	3	3	—
3497.03	Er	3	1 h	—	3494.397	Ce	2	—	—	3491.738	Gd	4	8	—
3497.030	Sc	12 w	—	—	3494.30	Pr	6	—	—	3491.696	Ce	12	—	—
3497.030	V	—	150	—	3494.27	Te	—	[15]	Bl	3491.62	Cr II	1	2	Sd
3497.020	Th	6	5	—	3494.26	Nd	10	2	—	3491.579	Th	5	5	—
3496.939	V I	12	—	—	3494.251	Ru I	50	8	—	3491.576	Ce	8	—	—
3496.910	U	1	4	—	3494.21	Tb	15	8	Ed	3491.54	A	—	[50]	Rt
3496.860	Er	25	20	—	3494.17	Fe I	2	—	—	3491.53	Pr	10 d	2	—
3496.812	Th	5	3	—	3494.136	Er	12	3	—	3491.495	Os	30	15	—
3496.807	Mn II	10	30	—	3494.135	Dy	20	2 h	—	3491.477	Cb	10	5	—
3496.794	Co I	30	—	—	3493.997	U	12	2 h	—	3491.47	Ca	—	4	Ad
3496.72	Dy	3	2	—	3493.936	Ce	8	—	—	3491.439	Re	3	—	—
3496.704	Mo	3	3	—	3493.90	Tb	8	3	Ed	3491.395	Ce	3	—	—
3496.681	Co I	150 R	4	—	3493.85	Hg II	—	[100]	Ps	3491.364	Nd	4 d	5 h	—
3496.444	Ce	5	—	—	3493.724	Ce II	18	—	—	3491.340	U	6	10	—
3496.439	Ir I	3	—	—	3493.721	Er	5	—	—	3491.321	Co I	200 R	8	—
3496.415	U	8	15	—	3493.697	Fe	3	1	—	3491.24	Tb	15	3	Ed
3496.350	Ni I	15	—	—	3493.678	Zr I	6	—	—	3491.24	A	—	[15]	Rt
3496.326	Ce	12	—	—	3493.600	Nd	6 d	6	—	3491.201	Rh I	15	1	—
3496.32	O II	—	[5]	Fl	3493.597	Sm	5	4	—	3491.136	Mo	3	5	—
3496.282	Cb	3 d	1 w	—	3493.526	Th	30	15	—	3491.133	W	7	10	—
3496.27	Dy	4	—	Ed	3493.474	Fe II	40	80	—	3491.09	Eu	10	1	—
3496.210	Ce	2	—	—	3493.473	Cb	3	3	—	3491.072	Rh I	40	2	—
3496.210	Zr II	100	100	—	3493.465	Ta	15 W	—	—	3491.054	Ti II	8	8	—
3496.20	Tb	15	—	Ed	3493.408	Sm II	2	1	—	3491.045	Sm	2	—	—
3496.18	Pr	8	2	—	3493.407	Eu	7	—	—	3491.031	Cb	30	50	—
3496.127	Ru I	12	—	—	3493.407	U	2	5	—	3490.995	Pt	2	2	Sf
3496.080	Yt II	20	35	—	3493.337	Mo	6	10	—	3490.95	Ho	6	4 h	Ex
3496.070	Co	10	—	—	3493.333	U	6	15	—	3490.950	U	6	1	—
3496.05	Nd	4	4	—	3493.290	Fe I	1	—	—	3490.932	Ta	10	3	—
3496.026	Cb	10	10	—	3493.280	Ti I	15	1	—	3490.925	W II	7	15	—
3496.010	Ir I	8	—	—	3493.27	Tb	8	—	—	3490.89	A II	—	[5]	Rt
3495.990	Kr I	—	[10]	I	3493.26	Dy	3	—	m	3490.862	Re	25	—	—
3495.973	Ru	60	10	—	3493.25	A I	—	[20]	Ms	3490.765	Ti I	2	—	—
3495.960	Ti I	10	—	—	3493.220	Ru	20	1	—	3490.741	Co I	60	—	—
3495.941	Ce II	15	1	—	3493.215	F II	—	[3]	Di	3490.716	Ru	12	2	—
3495.928	Hf II	10	10	—	3493.195	W	6	3	—	3490.713	Ce	6	—	—
3495.922	Sm	8	2	—	3493.167	V II	15	100	—	3490.63	Dy	5	—	m
3495.92	Yb	20 Rwh	—	—	3493.158	Pr	10	2	—	3490.604	U	6	8	—
3495.896	Fe	6	1	—	3493.110	Ce	12	1	—	3490.575	Fe I	400	300	S
3495.889	Re	15	—	—	3493.10	Ho	10	10	Ex	3490.50	A I	—	[3]	Ms
3495.848	Os	—	10 h	—	3493.04	Kr II	—	[8 wh]	Me	3490.456	Th	5	5	—
3495.839	Mn II	25	150	—	3493.036	W	5	4	—	3490.44	P II	—	[70]	Gu
3495.83	Tb	8	—	Ed	3492.99	Tb	15	—	Ed	3490.418	Cb	1	10	Me
3495.754	Ti I	25	7	—	3492.983	Ce	3	—	—	3490.331	Os	40	30	—
3495.748	Hf II	10	15	—	3492.969	Eu	2	—	—	3490.320	W II	4	12	—
3495.748	U	5	5	—	3492.96	Tb	15	—	Ed	3490.29	Tb	8	—	Ed
3495.729	Ce	10	—	—	3492.960	Mn	10	—	—	3490.279	Th	5	5	—
3495.703	Th	10	1	—	3492.956	Ni I	1000 R	100 h	—	3490.259	Ce	4	—	—
3495.687	Co I	1000 R	25	—	3492.954	Au II	—	4	—	3490.242	U	12	20	—
3495.615	Os	20	12	—	3492.895	Sm	3	—	—	3490.236	Er	8	—	—

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3490.125	Ce	25	3	-	3487.533	Cb	3	2	-	3485.169	Er	10	2	-
3490.057	Er	10	3	-	3487.521	Re	4	-	-	3485.16	Eu	18 s	2 h	-
3489.943	V	-	.40	-	3487.49	Kr II	-	[7 h]	Me	3485.110	Ni I	6	-	-
3489.845	W II	-	6	-	3487.463	Os	50	15	-	3485.097	Cb	5	5 h	-
3489.832	Th	4	3	-	3487.461	Rh I	10	1	-	3485.054	Ce	30	10	-
3489.78	Tb	15	3	Ed	3487.456	Ru	5	-	-	3485.00	P	-	[50]	Gu
3489.772	Pd I	150 W	35	-	3487.403	Sm	10	4	-	3484.979	Eu	4	-	-
3489.749	Ru	12	-	-	3487.396	Ta	3	-	-	3484.972	Fe I	4	1	-
3489.739	Ti II	18	20	-	3487.39	Pr	3	1	-	3484.921	U	2	2 h	-
3489.670	Fe	20	15	-	3487.384	Tm	15	-	Me	3484.89	Nd	3 d	1	-
3489.59	Ho	10	10	Ex	3487.381	Ce	4	-	-	3484.87	Hg II	-	[5]	Ps
3489.58	Nd	10	-	-	3487.33	A II	-	[3]	Rt	3484.855	Fe I	1	-	-
3489.572	Ir	2	-	-	3487.288	Ce	3	-	-	3484.830	Er	30 d	7 d	-
3489.568	U	6	10	-	3487.282	U	4	1 h	-	3484.80	Pr	9	2	-
3489.555	Ce	5	-	-	3487.28	Tb	15	3	Ed	3484.743	Ce	10	1	-
3489.511	Th	4	-	Fd	3487.248	Os	40	12	-	3484.733	Re	3	-	-
3489.51	Tb	15	3	Ed	3487.214	Rh I	10	1	-	3484.73	Ho	40	30	Ex
3489.467	V I	30	7	-	3487.202	Dy	6	-	-	3484.723	Sm	3	1	-
3489.455	Ce	5	-	-	3487.162	Ce	10	-	-	3484.71	Hf	6	-	-
3489.430	Mo	-	3	-	3487.090	U	5	5 h	-	3484.70	Tb	8	3	Ed
3489.402	Co I	100 R	25	-	3487.08	Th	4	2	-	3484.698	Ce	5	-	-
3489.379	Ce	3	-	-	3487.08	Tm	10	20	Me	3484.683	Dy	10	3	-
3489.371	U	20	1	-	3487.021	Pr	6	1	-	3484.644	V II	-	5	-
3489.353	Er	10	-	-	3487.008	V I	6	4	Me	3484.627	Cb	3	15	-
3489.293	Nd	10	-	-	3486.976	Th	5	3	-	3484.621	Ta	5	3	-
3489.287	W	10	9	-	3486.97	Ag	2 h	5 h	-	3484.559	Ce	4	-	-
3489.25	Eu	18 w	2	-	3486.95	Tb	8	3	Ed	3484.557	Er	10	1	-
3489.188	Th	5	1	-	3486.90	Nd	8 d	-	-	3484.481	Ir I	15	4	-
3489.161	Ta	3	-	-	3486.879	Ir I	3	-	-	3484.38	La II	5	5	-
3489.090	Cb	5	50	-	3486.855	Ce	8	-	-	3484.367	Nd	6	2	-
3489.054	Ce	3	-	-	3486.83	Nd	15	4	-	3484.354	Re	3	-	-
3489.03	Se	-	[20]	Bl	3486.828	Er	20	7	-	3484.32	Pr	6	1	-
3489.02	Tb	8	-	Ed	3486.79	Si	-	6	Sy	3484.230	Ta	3	-	-
3489.013	Pr	15	4	-	3486.789	Ru I	30	-	-	3484.15	Cr II	8	35	-
3488.97	Dy	5	1 h	m	3486.717	Cb	5	1	-	3484.120	Ce	3	-	-
3488.87	Os	10 d	8	-	3486.688	Ta	3	-	-	3484.09	Nd	12	6	-
3488.858	Cu I	30	5	m	3486.664	Ce	2	-	-	3484.086	Th	8	8	-
3488.847	Ta	18	1 h	-	3486.6	Rn	-	[10]	Wo	3484.083	Ir I	15	3	-
3488.846	Re	5	-	-	3486.557	Fe I	2	-	-	3484.070	Eu	2	-	-
3488.837	Th	3	-	Fd	3486.520	Th	12	12	-	3484.054	Ce	3	-	-
3488.832	Cb	2	30	-	3486.483	Pr	12	2	-	3484.049	Yt I	7	4	-
3488.815	U	8	15	-	3486.48	Cr	20	4	-	3484.049	Cb	10	100	-
3488.811	Ce	8	-	-	3486.40	Ca	-	2	Ad	3484.036	Rh I	40	4	-
3488.80	Yb	12	15	-	3486.34	Ho	2	6	Ex	3484.021	U	3	-	-
3488.77	Tb	8	-	Ed	3486.32	Nd	6 d	8	-	3483.985	Ce	5	-	-
3488.77	P	-	[70]	Gu	3486.303	U	5	15	-	3483.88	Ho	-	4 h	Ex
3488.765	Os	30	10	-	3486.269	Ce	10	-	-	3483.86	W	-	6 d	-
3488.742	Cb	1	10 h	Me	3486.24	Tb	8	-	Ed	3483.86	I	-	[7]	Ke
3488.680	Mn	50	200	-	3486.206	Ru I	20	-	-	3483.843	Mo	20 w	10	-
3488.65	Kr II	-	[30 h]	Me	3486.196	Gd	3	3	-	3483.84	Rb	-	[5]	Ok
3488.619	U	6	-	-	3486.142	Dy	2	-	-	3483.80	Ti II	-	70 wh	-
3488.575	Ir I	15	3	-	3486.128	W II	5	20	-	3483.790	Pr	5	-	-
3488.553	Ce	35	5 h	-	3486.128	Zr	2 h	-	-	3483.774	Ni I	500 R	30	-
3488.545	Ta	2 h	1 h	-	3485.972	U	5 r	8	-	3483.773	U	2	4	-
3488.529	Er	6	-	-	3485.931	Cb	10	5	-	3483.761	Cu I	60	25	-
3488.453	Cr	35	10	-	3485.928	Mo	8	4	-	3483.69	Tb	30	8	Ed
3488.372	Ce	4	-	-	3485.924	V II	8	70	-	3483.673	Mo	5	5	-
3488.35	Hg	-	2 h	St	3485.90	Dy	5	1	-	3483.576	U	2	1 h	-
3488.331	Nd	6 d	4	-	3485.888	Ni I	150	30	-	3483.539	Zr II	20	25	-
3488.306	Eu	18	1	-	3485.867	V I	3	1	Me	3483.52	Cr	15	30	-
3488.301	U	6	-	-	3485.865	Eu	20	2	-	3483.518	Pr	15	3	-
3488.293	Ni I	2	-	-	3485.860	Er	25	6	-	3483.512	Ce	6	-	-
3488.235	Pr	5	-	-	3485.86	Ho	6	6	Ex	3483.428	Pt	70	10	-
3488.168	U	3	1 h	-	3485.796	Sm II	2 h	1	-	3483.412	Th	8	8	-
3488.164	Ce	5	-	-	3485.76	Yb	20	40	-	3483.410	Co I	300 R	10	-
3488.14	Mo	-	20	-	3485.73	Mo	-	20	-	3483.39	Pb	-	30	Sx
3488.13	Tb	8	-	Ed	3485.726	Yt I	12	4	-	3483.323	Ce	3	-	-
3488.052	Ir	2	-	-	3485.723	U	2	-	-	3483.292	Ru I	60	10	-
3487.996	Fe II	1 h	1 h	-	3485.7	hh Pb	30	-	L	3483.29	Dy	2	1 h	-
3487.902	Zr I	2	-	-	3485.700	Co I	15	-	-	3483.200	Sm	2	2	-
3487.863	Ce	4	-	-	3485.689	Ti I	25	4	-	3483.18	Ca	2	5	Ad
3487.849	Th	10	8	-	3485.56	Tb	15	-	Ed	3483.175	Th	2	3	Ms
3487.803	Zr I	2	-	-	3485.502	Ir I	15	3	-	3483.17	A I	-	[5]	-
3487.76	Ag I	3 h	3 h	Bx	3485.500	W	10	9	-	3483.159	Ru	50	8	-
3487.721	He I	-	[2]	Ps	3485.483	Mo	-	25	-	3483.141	Co I	10	-	-
3487.713	Co I	20	1	-	3485.475	Th	4	4	-	3483.04	Tb	15	8	Ed
3487.651	U	1	6	-	3485.435	Eu	20	-	-	3483.04	Cd II	-	6	Vs
3487.62	Tb	15	3	Ed	3485.366	Co	100 wh	3	-	3483.013	Zr I	15	-	-
3487.609	Sm	3	1	-	3485.342	Fe I	100	50	S	3483.010	Fe I	50	10	-
3487.598	Ca I	100	2	IWg	3485.325	Zr II	15	20	-	3483.010	Ti I	8	-	-
3487.582	U	8	1	-	3485.285	W	10	8	-	3482.951	Cb	2	100	-
3487.58	Dy	6	2	-	3485.267	Pt I	150	200 R	-	3482.909	Mn II	50	250	-
3487.574	Pr	25	5	-	3485.259	U	1	2	-	3482.836	Th	2 d	2 d	-
3487.57	Hf II	6	15	-	3485.216	Th	8	8	-	3482.824	Sm	4	-	-
3487.566	Cu I	30	5	-	3485.17	Hf II	8	3	-	3482.809	Zr I	20	1	-

3482.8—3476.2 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3482.807	Ce	10	-	-	3480.381	Re I	50	-	-	3478.23	Dy	2	1	m
3482.80	Tb	8	-	Ed	3480.379	Ce II	15	-	-	3478.20	Eu	10	-	-
3482.777	W	10	5	-	3480.361	Ag	-	6 h	-	3478.136	Th	10	10	-
3482.77	Dy	6	1	-	3480.359	U	3	2	-	3478.05	Ho	6	10	Ex
3482.76	Mo	-	10	-	3480.347	Fe	2	-	-	3478.006	Cb	3	2	-
3482.694	Sm II	2	-	-	3480.29	Cr I	30	1	-	3477.994	U	3	1 h	-
3482.69	Eu	3	-	-	3480.28	Te	-	[5]	Bl	3477.989	Ce	10	-	-
3482.613	Gd	15	15	-	3480.273	Ce II	15	-	-	3477.947	W	10	8	-
3482.605	Er	10	1	-	3480.252	Sm	5	4	-	3477.94	Dy	4	1	-
3482.598	Ir I	15	4	-	3480.213	Cb	2	20	-	3477.938	Er	9	1	-
3482.591	Cr	1	6	-	3480.183	Ni I	5	-	-	3477.89	Kr II	-	[5]	Me
3482.552	Th	10	10	-	3480.17	Tb	15	8	Ed	3477.864	Ni I	5	3	-
3482.54	Eu	6 w	2	-	3480.16	In	-	3	Sq	3477.856	Fe	20	4	-
3482.525	Cb	5 h	1	-	3480.131	Ru	10	5 h	-	3477.85	Hg I	2	-	Wd
3482.49	Nd	8	4	-	3480.13	Cs I	50	-	Bv	3477.848	Co I	18	-	-
3482.420	Ce	5	-	-	3480.089	Mo	5	5	-	3477.837	U	4	5	-
3482.395	Mo	5	3	-	3480.05	Th	5	1	-	3477.779	Rh	2	10	-
3482.345	Ce II	20	2	-	3480.020	Co I	80 W	2 h	-	3477.767	Ir I	15	-	-
3482.341	Ru	30	3	-	3479.982	Ce	3	-	-	3477.74	Ho	4	6	Ex
3482.340	Mo	5	3	-	3479.854	Nd	-	4	-	3477.72	Ca	2	2	Ad
3482.248	Pr	15	-	-	3479.836	V II	20	80	-	3477.705	Th	8	8	-
3482.237	Re	40	-	-	3479.82	Cl II	-	[30]	Ks	3477.69	Ne II	-	[7]	Bn
3482.231	Os	20	10	-	3479.76	Dy	2	1	-	3477.67	Pt II	-	2	Sh
3482.187	V I	40	50	-	3479.744	Ce	4	-	-	3477.642	Os	20	3	-
3482.140	Ce II	20	-	-	3479.686	Fe	2	-	-	3477.636	Zr I	2	-	-
3482.131	Zr I	2	-	-	3479.607	Ce	15	1	-	3477.635	Ta	3 h	-	-
3482.112	Os	40	15	-	3479.564	Cb	5	200	-	3477.56	Eu	8	-	-
3482.09	Dy	2	2	-	3479.512	Sm II	8	3	-	3477.516	V	-	100	Me
3482.039	Ir I	2	-	-	3479.5	Rn	-	[30]	Pe	3477.498	U	3	3	-
3481.96	Ne II	-	[25]	Bn	3479.46	Pr	8 d	1 h	-	3477.452	Ce	15	1	-
3481.909	Cu I	3	3	Sh	3479.46	Ga	-	6	Kl	3477.448	Ta	18 d	7 d	-
3481.863	Fe	1 h	-	-	3479.443	Ta	3	1	-	3477.44	P	-	[30]	Gu
3481.854	Hf	5	-	-	3479.426	Mo	20	20	-	3477.428	Sm	8	-	-
3481.833	I	-	[40]	Ke	3479.416	Er	25	10	-	3477.392	Ce	8	-	-
3481.825	W	10	12 l	-	3479.402	Ce	2	-	-	3477.269	Ce	2	-	-
3481.818	Gd	80	60	-	3479.392	Zr II	60	80	-	3477.268	W	5	3	-
3481.807	Er	8	-	-	3479.308	Cr I	35 r	-	-	3477.256	Nd	10 wh	-	-
3481.787	Mo	5	5	-	3479.29	Tb	8	3	Ed	3477.24	Tb	8	-	Ed
3481.752	Ce	2 h	-	-	3479.285	Hf II	10	15	-	3477.25	Cr	6	1	-
3481.75	Tm	20	10	Me	3479.283	Pr	9	-	-	3477.220	Ta	5	35 h	-
3481.675	Ti I	15	1	-	3479.264	Ni I	5	-	-	3477.19	Eu	4	-	-
3481.673	Ce	3	-	-	3479.25	Cs	-	[4]	Bs	3477.182	Ti II	60	100	-
3481.62	Dy	2	1 h	-	3479.202	Ir I	2	-	-	3477.161	Cr I	25	5	-
3481.61	Eu	45 W	2	-	3479.177	Th	15	10	-	3477.143	Re	15	-	-
3481.565	Fe I	1	-	-	3479.135	Sm II	3	2	-	3477.13	W	-	5 d	-
3481.55	Si	-	5	Sy	3479.124	Cr I	30	1	-	3477.093	U	2	3	-
3481.536	Cr	30	30	-	3479.099	Th	3	2	-	3477.074	Dy	90	30	-
3481.447	Zr II	2	2	-	3479.028	Ce	20	-	-	3477.07	Eu	5 w	-	-
3481.438	Nd	4	2	-	3479.025	Zr II	10	15	-	3477.068	Er	15	6	-
3481.359	Gd	150	150	-	3479.00	Kr II	-	[3 h]	Me	3477.007	Fe I	3	1	-
3481.331	W	6	5	-	3478.990	Hf II	30	40	-	3476.982	Ti II	8	8	-
3481.303	Cr I	15	35	-	3478.97	He I	-	[2]	Ps	3476.98	Eu	15	2	-
3481.297	Ru I	70	35	-	3478.962	V	-	25	Me	3476.917	Th	5	3	-
3481.159	Ce II	12	1	-	3478.951	Sm	4 d	-	-	3476.88	Cs I	100	-	Bv
3481.152	Rh	10	-	-	3478.93	Nd	5	-	-	3476.858	Fe I	3	4	-
3481.152	Pd I	500 r	2 h	-	3478.92	W	6	5	-	3476.852	Os	20	1	-
3481.146	Zr II	50	80	-	3478.918	Ti I	20	5	-	3476.842	Ce	35	10	-
3481.126	Ti I	12	5	-	3478.906	Rh I	500	100	-	3476.830	Mo	2	3	-
3481.11	K II	-	[30]	Bn	3478.90	Hg II	10 h	[18]	Ps	3476.755	Pt I	10	2	MI
3481.085	Ir I	6	2	-	3478.84	Yb	40	300	-	3476.74	A	-	[20]	Rt
3481.051	Cb	5	2	-	3478.787	Fe I	1	-	-	3476.74	Dy	2	-	-
3481.051	Th	5	3	-	3478.787	Zr I	12	2	-	3476.704	Fe I	300	200	S
3481.028	Pr	9	1	-	3478.778	Cb	2	50	-	3476.69	Tm	7	-	Me
3480.979	Ce	18	1	-	3478.771	Cr I	35	3	-	3476.63	Ni I	4	-	-
3480.897	Ti II	6	25	-	3478.744	Co I	60	2	-	3476.61	Eu	20	2	-
3480.853	Re I	50	-	-	3478.73	P II	-	[30]	Gu	3476.61	Be I	5	-	Ps
3480.834	Eu	10	-	-	3478.708	W	4	-	-	3476.575	Ce	5	-	-
3480.817	Dy	12	-	-	3478.692	Cb	30	15	-	3476.543	Th	10	10	-
3480.757	Ce	2	-	-	3478.629	Fe	20	6	-	3476.506	W	6	6	-
3480.75	Ne II	-	[4]	Bl	3478.623	Ca	-	2	-	3476.457	Ir I	15	2	-
3480.722	Er	4	-	-	3478.573	Ce	3	-	-	3476.452	Ti I	12	12	-
3480.71	Rb II	-	[10]	Ok	3478.556	Re I	2	-	-	3476.441	Re	30	-	-
3480.614	Ca	4	-	-	3478.555	Co I	40	2	-	3476.437	U	4	3	-
3480.607	La I	7	-	-	3478.529	Os	100	15	-	3476.364	Nd	4	-	-
3480.560	Sm	5	5	-	3478.498	Zr II	5	5	-	3476.36	Dy	4	1	-
3480.560	Nd	6	4	-	3478.492	Rh I	6	1	-	3476.360	Co I	100 R	-	m
3480.530	Ti I	40	10	-	3478.48	Dy	7	-	-	3476.355	Ce	15	-	-
3480.52	A	-	[5]	Rt	3478.464	Th	8	8	-	3476.347	Gd	5	5	-
3480.516	Ta	70	200 ws	-	3478.445	Sm	5	-	m	3476.344	Fe I	5	2	-
3480.466	W	5	5	-	3478.377	Fe I	1	-	-	3476.301	Er	30	7	-
3480.441	Er	25	8	-	3478.324	Ce	2	-	-	3476.30	Yb	80	10	-
3480.44	Tb	15	3	Ed	3478.303	U	-	2 h	-	3476.293	U	4	3	-
3480.44	Eu	8	1	-	3478.302	Zr II	9	7	-	3476.28	Cb	-	15	-
3480.42	Dy	5	1	-	3478.292	Ni I	3	-	-	3476.25	Pb	-	2	Sx
3480.406	Zr II	6	6	-	3478.24	A II	-	[5]	Rt	3476.248	V	-	40	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3476.029	Zr	2	-	-	3473.729	Bi	2 h	3	-	3471.650	Ce	3	-	-
3476.023	Fe	3 h	-	-	3473.725	Ce	5	-	-	3471.546	Co II	3	-	-
3476.015	Ir	5	-	-	3473.703	U	-	3 w	-	3471.531	Dy	10	5 h	-
3475.999	Cu I	25	10	-	3473.702	Dy	80	40	-	3471.523	Cb	5	5	-
3475.991	Ob	15	3 h	-	3473.682	Fe	3 h	-	m	3471.497	Cr I	30	3	-
3475.969	Th	3	2	-	3473.621	F II	-	[3]	Di	3471.49	In	-	6	Sq
3475.866	Fe	2	1	-	3473.612	Cr I	35	10	-	3471.378	Co I	80	25 wh	-
3475.835	W	10	7	-	3473.502	U	3	-	-	3471.36	Sn II	-	10 wh	Ro
3475.784	Ag	-	20	-	3473.502	Fe I	3	-	-	3471.34	Fe I	40	15	-
3475.762	Mn	8	-	-	3473.478	Ce	2	-	-	3471.302	Rh	2	-	-
3475.72	Tb	15	-	Ed	3473.475	Re I	10	-	-	3471.286	Ce	2 h	-	-
3475.68	F II	-	[3]	Di	3473.431	U	8	-	-	3471.270	Sm	3	-	-
3475.675	Ce II	15	-	-	3473.428	Nd	10	2	-	3471.270	Fe I	40	15	-
3475.651	Fe I	6	6	-	3473.409	Th	10	8	-	3471.220	Th	6	2	-
3475.65	Dy	2	1	-	3473.39	Ga	-	4	KI	3471.191	Cb	5	4	-
3475.585	Cb	10	15	-	3473.314	Ta	3	1	-	3471.189	Zr I	25	3	-
3475.536	Th	4	4	-	3473.314	F II	-	[15]	Di	3471.171	Ce	3	-	-
3475.535	Ir I	2	3 h	Ab	3473.309	Fe	10	2	-	3471.145	Dy	10	-	-
3475.454	Fe I	400	300	-	3473.30	Dy	3	-	-	3471.137	Er	10	1	-
3475.34	Dy	2	2 h	-	3473.288	U	2	-	-	3471.124	Zr II	-	5	-
3475.33	Tb	8	-	Ed	3473.229	Gd	50	40	-	3471.122	Sm	6	2	-
3475.31	Kr	-	[3 hl]	Me	3473.223	Mo	4	4	-	3471.086	U	2	3	-
3475.29	W	-	25	-	3473.18	Yt	5	2	-	3471.048	Ta	-	18	-
3475.185	Re	8	-	-	3473.131	Ce	10	-	-	3471.039	Cb	2	1	-
3475.129	Sm II	8	1	-	3473.13	Tb	8	3	Ed	3471.008	Ce	3	10	-
3475.129	Cr I, II	6	40	-	3473.126	Cb	3	2	-	3470.924	Mo	5	8	-
3475.102	Nd	10	2	-	3473.035	Ce	2	-	-	3470.92	Cs	-	[4]	Bs
3475.037	Sc I	2	-	-	3473.034	U	5	-	-	3470.914	Er	9	-	-
3475.032	Mo	5	10	-	3473.033	Th	10	10	-	3470.866	Nd	10	2	-
3475.0	bh Ca	30	-	L	3473.024	Cb	30	30	-	3470.82	P II	-	[50]	Gu
3474.990	U	4	3	-	3473.01	Hg	-	[30]	Ps	3470.77	O II	-	[100]	Mh
3474.98	Tb	8	-	Ed	3472.964	F II	-	[20]	Di	3470.68	Si	-	2	Sy
3474.887	Sr II	80	50	ISn	3472.94	Dy	3	1	-	3470.657	Rh I	500	125	-
3474.865	Cr I	35	3	-	3472.906	Cr	30	8	-	3470.651	Ru	3	-	-
3474.843	Ru	20	4	-	3472.896	Zr I	5	-	-	3470.59	Nd	8 d	2 d	-
3474.84	La II	4	8	Me	3472.874	Re I	15	-	-	3470.576	U	-	2	-
3474.81	Yb	10	20	-	3472.87	P II	-	[70]	Gu	3470.570	Th	4	1	-
3474.800	F II	-	[30]	Di	3472.832	Ta	7	3 h	-	3470.551	Sc I	8	-	-
3474.780	Rh I	700	125	-	3472.82	Er	8 h	-	-	3470.529	Cr I	25	6	-
3474.780	Ce	12	-	-	3472.82	Tb	50	15	Ed	3470.407	Ce	10	-	-
3474.763	Ca I	40	5	IWg	3472.793	Ti I	8	-	-	3470.401	Cr I	30	8	-
3474.71	Dy	2	1	-	3472.774	Cb	2	2	-	3470.37	O II	-	[25]	Mh
3474.707	Er	6	-	-	3472.764	Cr I	30	8	-	3470.36	Tb	15	3	Ed
3474.67	Tb	8	-	Ed	3472.724	Re I	25	-	-	3470.34	Ga II	-	[5]	Sy
3474.668	Cb	100	4	-	3472.716	Zr I	2	-	-	3470.27	A	-	[3]	Rt
3474.643	Mo	2	3	-	3472.71	Ba II	-	5	Sd	3470.265	V	-	70	-
3474.578	Cu I	5	-	m	3472.707	Co I	6	-	-	3470.262	U	4	2	-
3474.535	U	2	5	-	3472.693	Ru I	8	-	Sv	3470.254	Cb	3 h	100	-
3474.530	Co I	30	2	-	3472.653	Ru	12	3	-	3470.181	Zr I	2 h	-	-
3474.52	Eu	15	2	-	3472.571	Ne I	-	[500]	IHu	3470.18	Yt II	4	5	-
3474.46	Rb	-	[20]	Ok	3472.559	U	3	5	-	3470.17	Dy	7	1	-
3474.450	Pr	10	1	-	3472.545	Ni I	800 R	40	-	3470.05	Kr II	-	[30 wh]	Me
3474.440	Fe	10	6	-	3472.521	Ta	18	10	-	3470.035	Ce	6	-	-
3474.401	Ce	2	-	-	3472.509	Lu	5	6	-	3470.010	Mn	2	2	-
3474.379	Cr	35	8	-	3472.48	Lu	50	150	Me	3470.0	Rn	-	[2]	Wo
3474.371	Sm	3	-	-	3472.46	Sn II	-	3 h	Mc	3469.940	Zr II	4	2	-
3474.304	Th	6	6	-	3472.405	Hf	25	10	-	3469.926	Th	12	15	-
3474.29	Dy	12	2	-	3472.4	bh Zr	20	-	L	3469.87	Dy	3	1	-
3474.275	Er	8	6 w	-	3472.37	Tb	15	8	Ed	3469.85	Tb	30	3	Ed
3474.25	Ho	40	20	Ex	3472.362	W II	-	10	-	3469.834	Fe I	35	10	-
3474.23	Xe II	-	[12]	Hu	3472.36	Fe	1 wh	-	-	3469.81	Xe I	-	[4]	Me
3474.216	Ce II	15	1	-	3472.36	Xe I	-	[4]	Me	3469.81	Cs	-	[4]	Bs
3474.208	Re I	25	-	-	3472.357	Pr	8	1	-	3469.776	U	4	3	-
3474.203	Mo	2	3	-	3472.33	Yb	10	-	-	3469.722	Er	12	3	-
3474.200	I	-	[3]	Ke	3472.258	Nd	12	-	-	3469.705	Co I	8	-	-
3474.167	U	4	2	-	3472.251	Rh I	100	8	-	3469.634	Mo	3	4	-
3474.145	Zr	2	-	-	3472.25	Ho	6	8	Ex	3469.624	Rh I	100	10	-
3474.14	P	-	[70]	Gu	3472.25	Dy	4	1	-	3469.617	Sc I	4	2 h	-
3474.133	Mn II	12	400	-	3472.231	Ru	60	9	-	3469.600	Fe	1	-	-
3474.125	Os	4	10	-	3472.141	Cu I	20	5	-	3469.590	Cr I	50	15	-
3474.093	Er	8	6 w	-	3472.107	U	3	2	-	3469.525	V	2	100	Me
3474.044	Mn II	20	-	-	3472.07	Cr	-	80	-	3469.492	U	6	2 h	-
3474.022	Co I	3000 R	100	m	3472.034	Sm	10 wh	-	-	3469.486	Ni I	300	20	-
3473.994	Cb	2	20	-	3472.03	Fe	1	-	-	3469.478	Er	4 d	-	-
3473.953	Sm II	8	5	-	3472.027	Ce	10	-	-	3469.438	Cb	10	5	-
3473.95	Er	2	-	-	3471.994	Re	10 h	-	-	3469.40	Ho	-	4	Ex
3473.92	Ho	10	10	Ex	3471.979	U	2	2	-	3469.400	Ce	10	-	-
3473.915	Sb	3	300 wh	-	3471.973	Th	4	1	-	3469.395	Fe	2 h	1	-
3473.901	Ta	10	1 h	-	3471.95	Dy	3	-	-	3469.368	Os	12	5	-
3473.86	Eu	12	1	-	3471.915	Fe	1	-	-	3469.341	Th	6	3	-
3473.854	Pr	30	4	-	3471.75	Yt	6	5	-	3469.318	Pr	8	1	-
3473.812	Ce	8	-	-	3471.73	Tb	15	8	Ed	3469.30	Eu	5	2	-
3473.79	Tb	15	3	Ed	3471.725	Eu	7	1 h	-	3469.25	W	2	12	-
3473.784	Th	5	5	-	3471.714	Er	25	8	-	3469.23	Hf II	5	-	Me
3473.746	Ru I	70	35	-	3471.703	U	2	2	-	3469.219	Mo	20	10	-

3469.2—3462.0 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3469.213	U	1	2	-	-	3466.88	Eu	20	1	-	-	3464.419	Th	2 d	2 d	-	-
3469.206	Ag	10	8	-	Fn	3466.852	Ta	2	18 h	-	-	3464.37	Yb	200 R	50 r	-	-
3469.130	Cb	2	1	-	-	3466.828	W	2 hd	-	-	-	3464.37	Cd II	-	10	-	-
3469.101	U	1	4	-	-	3466.826	Mo	6	10	-	-	3464.36	Eu	15 d	-	-	-
3469.065	Zr I	8	-	-	-	3466.803	Ce	10	-	-	-	3464.339	Ne I	-	[75]	IHu	-
3469.028	Pr	8	1	-	-	3466.784	Sm	4	-	-	-	3464.233	Ba	5	-	Sz	-
3469.011	Fe	18	1	-	-	3466.749	Pr	10	2	-	-	3464.214	Ce	8	1 w	-	-
3469.007	Ce	8	-	-	-	3466.740	Sm	3	-	-	-	3464.19	Yb	12	-	-	-
3468.994	Gd	150	150	-	-	3466.647	Th	5	2	-	-	3464.17	Xe II	-	[2 h]	Hu	-
3468.99	Tb	15	-	Ed	-	3466.646	Ce	2	-	-	-	3464.170	V	-	40	-	-
3468.974	Co I	20	-	-	-	3466.588	V	-	30	-	-	3464.160	Ce II	10	-	-	-
3468.920	U	4	-	-	-	3466.579	Ne I	-	[150]	IHu	-	3464.14	Si	-	3	Sy	-
3468.885	Ce	8	-	-	-	3466.57	Tb	8	-	Ed	-	3464.14	A II	-	[15]	Rt	-
3468.848	Hf II	3 h	3	-	-	3466.536	Th	5	1	-	-	3464.139	Gd	4	3	-	-
3468.848	Fe I	30	12	-	-	3466.503	U	3	-	-	-	3464.082	Sm	30	10	-	-
3468.77	Dy	3	1	-	-	3466.500	Fe I	30	70	-	-	3464.043	Mn II	-	[15]	Cz	-
3468.75	Cr	30	8	-	-	3466.416	Eu	30	2	-	-	3464.00	Cr II	1	2	-	-
3468.720	Th	3	3	-	-	3466.34	A	-	[10]	Rt	-	3463.984	Gd	100	125	-	-
3468.708	Ce	3	-	-	-	3466.336	Mn II	-	[18]	Cz	-	3463.941	Pt	2	1 h	-	-
3468.679	Fe II	10	20	-	-	3466.30	U	8	2	-	-	3463.915	Ta	3	10	-	-
3468.659	Pr	10	1	-	-	3466.24	In	-	18	Sq	-	3463.910	U	4	-	-	-
3468.648	Re	10	-	-	-	3466.237	Pr	2	1 h	-	-	3463.876	Dy	12	2	-	-
3468.593	Ir I	2	2	-	-	3466.201	Cd I	1000	500	IMe	-	3463.829	V	-	25	-	-
3468.592	Co I	5	-	-	-	3466.139	U	4	-	-	-	3463.811	Cb	30	50	-	-
3468.556	U	4	1 h	-	-	3466.12	Dy	2	1	-	-	3463.771	Ta	50	-	-	-
3468.541	Cb	10	3	-	-	3466.077	Ce	5	-	-	-	3463.762	Ce	15 s	1	-	-
3468.54	Pd II	-	50 h	-	-	3466.029	Ce	3	-	-	-	3463.722	Th	10	12	-	-
3468.476	Ca I	20	3	IWg	-	3465.983	Re I	20	-	-	-	3463.683	Cb	5	2	-	-
3468.435	Dy	50	3	-	-	3465.98	Tb	30	-	Ed	-	3463.63	Al II	3	[1]	Sy	-
3468.42	Tb	8	-	Ed	-	3465.929	Th	5	5	Fd	-	3463.611	Sm	2	-	-	-
3468.420	Nd	10	2	-	-	3465.92	Hf II	5	2	Me	-	3463.610	Cr	15	1	-	-
3468.403	W	10	9	-	-	3465.865	Cb	30	40	-	-	3463.6	Pb II	-	[50]	Ea	-
3468.383	Ce	6	-	-	-	3465.863	Fe I	500	400	S	-	3463.573	Mo	10 w	20 w	-	-
3468.325	Zr	4	-	-	-	3465.86	Mo	5	5	-	-	3463.513	W II	8	25	-	-
3468.24	W II	1	6	m	-	3465.80	A II	-	[3]	Rt	-	3463.499	Cu I	6 h	-	-	-
3468.221	Th	10	12	-	-	3465.800	Co I	2000 R	25	-	-	3463.499	Co I	8	-	-	-
3468.16	Nd	6 d	2 d	-	-	3465.766	Th	10	10	-	-	3463.425	Cs	-	[6]	Sv	-
3468.127	Cb	-	50	Me	-	3465.757	Pr	9	4	-	-	3463.395	V I	10	2	-	-
3468.113	Ce	20	1	-	-	3465.75	Hg	-	2	St	-	3463.36	Dy	5	2	-	-
3468.087	Gd	3	2	-	-	3465.73	Sn	-	[3]	Lg	-	3463.349	Ce	3	-	-	-
3468.065	Pr	8	1	-	-	3465.661	Mo	6	6	-	-	3463.330	Mn II	-	[12]	Cz	-
3468.044	U	3	3 w	-	-	3465.632	Zr I	3	-	-	-	3463.302	Fe I	7	1	-	-
3468.03	Tb	50	15	Ed	-	3465.583	Cr	30	8	-	-	3463.28	Eu	18 W	1 h	-	-
3467.99	I II	-	[7]	Bl	-	3465.562	Ti II	6	60	-	-	3463.250	W	10	15	-	-
3467.955	Re I	100 w	-	-	-	3465.505	Ta	-	15 h	-	-	3463.218	Ce	12	1	-	-
3467.928	Th	10	8	-	-	3465.503	Ce	5	-	-	-	3463.205	Ti I	6	3	-	-
3467.887	Eu	5	-	-	-	3465.457	Sm	5	-	-	-	3463.184	Sm	2	1	-	-
3467.885	W	10	8	-	-	3465.44	Nd	6 wh	-	-	-	3463.144	Ru I	60	4	-	-
3467.874	Sm II	6	3	-	-	3465.435	Os	60	12	-	-	3463.128	Ce	3	-	-	-
3467.873	Yt II	12	12	-	-	3465.416	Ce	8	-	-	-	3463.120	Ir	4	-	Ab	-
3467.872	Pr	8	2	-	-	3465.41	Kr II	-	[6 whl]	Me	-	3463.111	Pr	8	1	-	-
3467.86	Dy	4	1	-	-	3465.408	W	4	4	-	-	3463.1	Rn	-	[2]	Pe	-
3467.853	Mo	5	10	-	-	3465.401	Cu I	10	2 h	-	-	3463.078	V	-	30	Me	-
3467.776	Ce II	15	-	-	-	3465.302	Ce	8	-	-	-	3463.032	Mo	-	20	-	-
3467.76	Ca	-	3	Ad	-	3465.30	Dy	2	-	-	-	3463.03	Eu	8	-	-	-
3467.732	Ni I	8	-	-	-	3465.286	Ru	5	2 h	-	-	3463.030	Cb	5	30	-	-
3467.73	Te	-	[15]	Bl	-	3465.250	Cr	35	30	m	-	3463.017	Zr II	18	40	-	-
3467.715	Cr	50	30	-	-	3465.249	V	2	25	-	-	3463.00	Gd	6	4	Ed	-
3467.66	In	-	12	Sq	-	3465.225	Ir I	12	1	-	-	3462.97	Tb	15	3	Ed	-
3467.656	U	2	2	-	-	3465.20	Cs	-	[4]	Sv	-	3462.894	Ta	2 h	1 h	-	-
3467.656	Cd I	800	400	IMe	-	3465.195	Mn	2	-	-	-	3462.878	Mn II	-	[10]	Cz	-
3467.603	Hf	8	-	-	-	3465.12	Er	8 d	-	-	-	3462.855	Th	10	12	-	-
3467.51	Tm	5	-	Me	-	3465.09	W	-	10	-	-	3462.804	Ni I	6	10	-	-
3467.502	Ni I	300	15	-	-	3465.037	Mn II	-	[18]	Cz	-	3462.803	Co I	1000 R	80	-	-
3467.5	bh Sr	4	-	L	-	3465.019	Th	5	5	-	-	3462.767	Ce	10	-	-	-
3467.497	Ce	2	-	-	-	3464.988	Ce	12	-	-	-	3462.73	Cr II	2	8	-	-
3467.49	Dy	2	1	-	-	3464.948	U	4	4	-	-	3462.688	Sm II	5	2	-	-
3467.468	Cb	15	20	-	-	3464.934	Nd	10	2 h	-	-	3462.647	Cb	5	3	-	-
3467.452	U	2	-	-	-	3464.917	Fe I	2	-	-	-	3462.641	Hf II	15	12	-	-
3467.323	V	-	3	-	-	3464.881	Os	15	5	-	-	3462.62	Ca	2	4	Ad	-
3467.280	Gd	100	100	-	-	3464.869	U	2	-	-	-	3462.58	Er	10	-	-	-
3467.26	Tb	3	3	Ed	-	3464.862	Ce	12	-	-	-	3462.51	Tb	8	3	Ed	-
3467.260	Ti I	25	6	-	-	3464.836	Cr	30	3	-	-	3462.494	Na II	2	[15]	Fr	-
3467.245	Sb	1	2 h	-	-	3464.722	Ce	2	-	-	-	3462.433	Ce	8	-	-	-
3467.07	Dy	3	1	-	-	3464.722	Re I	100	-	-	-	3462.361	Fe I	10	3	-	-
3467.07	Ho	8	6	Ex	-	3464.672	U	-	2	-	-	3462.36	Pr	3	-	-	-
3467.046	Ru	50	3	-	-	3464.66	S	-	[8]	Bl	-	3462.32	La	2	2 h	Me	-
3467.040	Pr	8	2	-	-	3464.63	Tb	8	3	Ed	-	3462.234	Ce	3	-	-	-
3467.022	Cr I	50	20	-	-	3464.536	Er	10	3	-	-	3462.21	Eu	5	1 h	-	-
3466.969	Mo	5	8	-	-	3464.493	Fe II	1 h	1 h	-	-	3462.20	Tm	250	200	Me	-
3466.961	Gd	15	10	-	-	3464.470	U	4	-	-	-	3462.191	Os	20	10	-	-
3466.946	Ce II	10	-	-	-	3464.46	Dy	2	1	-	-	3462.183	Sc I	4	2 h	-	-
3466.92	Tb	8	-	Ed	-	3464.457	Sr II	200	200	ISn	-	3462.10	Pr	6	-	-	-
3466.899	Th	3	3	-	-	3464.449	W	-	12	-	-	3462.06	Mo	-	25	-	-
3466.895	Fe I	10	4	-	-	3464.428	Sm II	3	1	-	-	3462.040	Ru	5	-	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3462.040	Rh I	1000	150	-	3459.740	Fe	2	1	-	3457.152	V	2	150	-
3461.96	Ho	20	20	Ex	3459.709	U	3	4	-	3457.13	Ca	2	3	Ad
3461.956	Gd	5	5	-	3459.703	Cb	30	20	-	3457.09	Ag I	2	1 h	-
3461.924	Ru	30	-	-	3459.641	Th	5	5	-	3457.088	Yt II	5	7	-
3461.873	Pr	6	2	-	3459.569	Ru I	30	-	-	3457.086	Fe	5	-	-
3461.814	W	9	5	-	3459.568	Sb	2	3 h	-	3457.075	Th	5	1	-
3461.793	Ce	10	-	-	3459.54	Cb	-	20	-	3457.071	Rh I	100	4	-
3461.71	Yb	1	3	Me	3459.522	W	9	8	-	3457.054	Eu	25	2	-
3461.665	Eu	3	-	-	3459.500	Th	4	4	-	3457.053	Gd	5	5	-
3461.655	W	3	-	-	3459.435	Ce	2	-	-	3457.051	U	8	10	-
3461.652	Ni I	800 R	50 h	-	3459.431	Ti	20	1	-	3457.04	Cb	-	15 wh	-
3461.611	Cb	5 h	2	-	3459.429	Fe	10	3	-	3457.03	Tb	50	8	Ed
3461.582	Ir	4	-	Ab	3459.428	Cu I	25	2 h	-	3456.988	Cb	5 h	-	-
3461.576	V	-	3	-	3459.396	Sm	10	2	-	3456.936	Th	3	3	-
3461.574	Rb II	-	[200]	Rr	3459.385	Ce	2 h	15 wh	-	3456.934	Fe II	3	4	-
3461.500	Ti II	80	125	-	3459.38	Ne II	-	[4]	Bl	3456.926	Co I	30	2	-
3461.417	Ce	2	-	-	3459.330	U	-	3	-	3456.914	V I	20	-	-
3461.405	Sm	5	4	-	3459.30	Dy	4	1	-	3456.87	Kr I	-	[3]	Me
3461.40	Er	10	1	-	3459.29	Cr	-	35	-	3456.84	Te	-	[10]	Bl
3461.380	Eu	25	2	-	3459.26	Sb	-	[15]	Lg	3456.83	Th	30	-	Ed
3461.364	W	7	6	-	3459.218	Rh	2	2	-	3456.772	Ce II	8	1	-
3461.36	Ho	-	4	Ex	3459.189	Sm	6	3	-	3456.68	Ne II	-	[12 I]	Bn
3461.344	Ce	15 s	-	-	3459.185	Cs II	-	[15]	Ot	3456.674	Ce	20	1	-
3461.31	Dy	3	1	-	3459.165	U	3	-	-	3456.661	Ti I	2	-	-
3461.26	Xe II	-	[50 h]	Hu	3459.144	Ce	5	-	-	3456.620	Ru I	60	8	-
3461.244	Pr	4	-	-	3459.024	W	6	3	-	3456.605	U	2 h	2	-
3461.218	Th	10	4	-	3459.018	Os	100	10	-	3456.6	Ho	-	4 h	Ex
3461.217	Ce	4	-	-	3458.99	Dy	10	1	-	3456.566	Dy	50	30	-
3461.184	La I	10	2	-	3458.96	U	2 d	1 d	-	3456.561	Er	12	6	-
3461.176	Co I	100 wh	3	-	3458.952	Cb	10	10	-	3456.538	Cb	15	10	-
3461.17	*Tm	15	5	Me	3458.949	Nd	6	2	-	3456.524	Mo	3	4	-
3461.138	Sm	8	3	-	3458.934	Zr II	25	20	-	3456.52	Sr I	3	-	Fl
3461.092	Zr I	20	1	-	3458.884	Re I	25	-	-	3456.52	Ne	-	[7]	Bl
3461.078	A I	-	[300]	IHu	3458.87	Cb	2	1	-	3456.441	Th	5	4	-
3461.056	Pr	10	2	-	3458.863	Mo	-	25	-	3456.437	Co I	5	-	-
3461.021	Th	10	4	-	3458.862	Ce	8	-	-	3456.390	Ti II	25	125	-
3461.01	Yt II	7	12	m	3458.796	Pr	3	-	-	3456.387	Mo	15 w	10	-
3461.007	I II	-	[25]	Ke	3458.792	Er	5	-	-	3456.340	Ce II	10	-	-
3461.003	U	3	3	-	3458.779	Nd	12	2	-	3456.297	U	3	2 h	-
3461.00	Tb	15	8	Ed	3458.741	Cb	5	-	-	3456.2	Ra II	-	[5]	Rs
3460.999	Ce	12	-	-	3458.728	Cb	-	10	Me	3456.17	Hg	-	[10]	Ps
3460.971	Dy	100	3	-	3458.683	U	5	3	-	3456.152	Mo	5	6	-
3460.968	Er	20 l	7	-	3458.6	Rn	-	[5]	Wo	3456.139	Os	20	10	-
3460.95	Ho	6	4	Ex	3458.57	Dy	2	-	-	3456.114	Sm	4	-	-
3460.90	Kr	-	[2]	Me	3458.474	Ni I	800 R	50 h	-	3456.031	Ce	2	-	-
3460.784	W	3	3	-	3458.460	U	2	-	-	3456.01	Dy	40 W	-	-
3460.784	Mo	25	25	-	3458.385	Os	200	12	-	3456.004	Nd	4	-	-
3460.783	Ce	2	-	-	3458.319	W	9	9	-	3456.003	Er	25 d	10 d	-
3460.781	U	2	-	-	3458.309	Fe	60	25	-	3456.00	Ho	60	60	Ex
3460.774	Pd I	300 r	600 h	-	3458.28	Yb	12	100	-	3455.99	Tb	8	-	Ed
3460.719	Co I	18	-	-	3458.24	Pr	7	2	-	3455.972	Pr	30	3	-
3460.700	So I	6	2 h	-	3458.230	Al	-	[10]	Sy	3455.949	Th	4	4	-
3460.663	Pr	3	-	-	3458.218	Ce	4	-	-	3455.933	U	3	2	-
3460.64	Dy	4	1	-	3458.171	U	8	-	-	3455.908	Zr I	12	1	-
3460.63	Sm	3 w	1	-	3458.152	Mo	5	8	-	3455.898	So I	3	2 h	-
3460.581	Ce	2	-	-	3458.090	Cr	35	15	-	3455.86	Mo	-	10	-
3460.581	Nd	25	6	-	3458.028	Co I	60 w	-	-	3455.767	Nd	2	-	-
3460.544	Ir	3	-	Ab	3458.020	Ti I	8	1	-	3455.755	Ti I	6	-	-
3460.525	Ne I	-	[75]	IHu	3458.000	Nd	12	4	-	3455.742	U	5	4	-
3460.48	Ti II	-	[20 d]	El	3457.926	Rh I	125	10	-	3455.732	Ru	12	-	-
3460.47	Re I	1000 W	-	-	3457.921	Sm II	5	1	-	3455.70	Ho	6	6 h	Ex
3460.430	Cr I	40	30	-	3457.906	Th	3	3	-	3455.602	Cr	50	35	-
3460.42	W	-	15	-	3457.851	Cu I	50	15	-	3455.49	Pb I	-	70	Ro
3460.40	Dy	20	2	-	3457.85	K II	-	[5]	Bn	3455.48	Cs	-	[4]	Bs
3460.38	Tb	15	8	Ed	3457.81	A I	-	[3]	Ms	3455.471	Ce	2	-	-
3460.351	U	3	5	-	3457.794	Cb	15	10	-	3455.425	Ti I	8	-	-
3460.328	Mn II	60	500	-	3457.720	W	10 s	9	-	3455.422	Rh I	50	2	-
3460.31	La II	2	3	Me	3457.714	U	5	10	-	3455.394	Ti I	10	-	-
3460.290	Eu	15	1 h	-	3457.683	Th	5	5	-	3455.386	Ru	20	-	-
3460.27	Yb	30	5	-	3457.63	Cr	4	125	-	3455.35	Tb	15	3	Ed
3460.226	Mo	5	5	-	3457.6	Ti	-	10	Cx	3455.281	Cr	35	10	-
3460.163	Ce	6	-	-	3457.570	Eu	25	1	-	3455.275	Bi II	-	100 h	-
3460.13	Kr I	-	[2]	Me	3457.564	Zr II	25	25	-	3455.275	Th	5	5	-
3460.13	Nd	6	-	2 h	3457.560	Ce	18	-	-	3455.234	Co I	2000 R	10	-
3460.09	Kr II	-	[50]	Me	3457.55	Tb	8	-	Ed	3455.234	Fe	2	-	-
3460.08	Xe II	-	[5]	Hu	3457.515	Fe I	1	-	-	3455.219	Rh I	300	12	-
3460.058	U	5	-	-	3457.494	Ti I	10	1	-	3455.212	V I	5	3	-
3460.05	Dy	5	1	m	3457.448	Sc I	8	2	-	3455.20	Be I	20	-	Ps
3460.018	Mn II	5	5	-	3457.366	W	9	8	-	3455.1	Rn	-	[2]	Pe
3459.933	Zr II	20	2	-	3457.298	Ti I	7	-	-	3455.08	Dy	3	1 h	-
3459.923	Mo	8	8	-	3457.26	Er	10	1	-	3455.07	Te	-	[15]	Bl
3459.918	Fe I	80	50	-	3457.203	Cb	5	3	-	3455.038	Ir	3	1 h	-
3459.917	U	8	-	-	3457.184	Zr I	10	-	-	3455.031	Os	50	15	-
3459.87	Tb	8	-	Ed	3457.18	Cs	-	[4]	Bs	3455.023	Ce	5	-	-
3459.833	Ce	12	1	-	3457.173	Ce II	6	-	-	3455.021	W	-	20	-

3455.0—3447.7 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3455.01	Bi II	—	[10]	MI	3452.93	Pr	6	1	—	3450.390	Os	10	10	—
3455.0	Pb II	—	[10]	Ea	3452.903	Ru I	60	6	—	3450.385	Gd	100	100	—
3454.99	Cr	—	100	—	3452.890	Ni I	600 R	50	—	3450.361	Ce	3	—	—
3454.959	Sm II	25	12	—	3452.806	Ce	5	—	—	3450.36	Cs	—	[6]	Sv
3454.95	Th	1 d	3	—	3452.795	Mo	—	20	—	3450.332	Cu I	150	30	—
3454.94	A I	—	[20]	Ma	3452.768	Sm II	4	1	—	3450.330	Fe I	150	80	—
3454.914	Cb	3	80	—	3452.726	U	—	3 w	—	3450.30	Tb	15	3	Ed
3454.911	Ce	5	—	—	3452.683	Th	10	10	—	3450.288	Rh I	100	10	—
3454.900	Gd	25	20	—	3452.647	Cb	15	5	—	3450.232	Ce	8	—	—
3454.882	V I	15	12	—	3452.623	Ce II	5	—	—	3450.22	Dy	4	2	m
3454.844	U	—	2	—	3452.622	W	7	4	—	3450.18	Nd	10	—	—
3454.82	Bi II	—	[5]	MI	3452.603	Mo	10	8	—	3450.18	Eu	3	—	—
3454.807	Ce	8	—	—	3452.638	Ce	5	—	—	3450.084	Re	30	—	—
3454.777	Sm	4	—	—	3452.507	W II	4	12	—	3450.0	Pb II	—	[10]	Ea
3454.77	Lu	—	3 h	Me	3452.470	Ti II	12	100	—	3449.984	Ce	10	—	—
3454.76	Eu	40 W	2	—	3452.39	Yb	12	—	—	3449.981	U	8	3	—
3454.73	Ti I	3	—	—	3452.37	Cb	15 W	—	—	3449.951	Th	5	2	—
3454.73	In	—	3	Sq	3452.37	Tb	15	3	Ed	3449.915	Zr I	10	—	—
3454.706	Cb	3	50	—	3452.346	Cb	5	200	—	3449.910	Ce II	5	—	—
3454.686	Cu	40	10 h	—	3452.32	A	—	[3]	Ms	3449.898	Dy	40	5	—
3454.657	Th	3 d	1 d	—	3452.315	Co	8	5	—	3449.874	Ti I	6	—	—
3454.617	U	10	—	—	3452.31	Hf	3	—	Me	3449.869	W II	6	25	—
3454.576	Zr II	7	4	—	3452.30	Sr II	1	2	Sd	3449.851	Mo	5	5	—
3454.539	W	—	9	—	3452.290	B II	5	30	—	3449.826	Pr	30	4	—
3454.516	Dy	18	2	—	3452.279	Ce	2	—	—	3449.80	U	2	—	—
3454.5	Bi II	—	[5]	MI	3452.277	Fe I	150	8	—	3449.77	Tm	10	20	Me
3454.475	Ce	10	40	—	3452.26	Er	8	1	—	3449.706	Co I	5	8	—
3454.47	Pr	6	1 h	—	3452.245	Eu	10	—	Kn	3449.648	Th	8	8	—
3454.389	Nd	6	2	—	3452.214	Ce	4	—	—	3449.628	Gd	10	8	—
3454.326	Dy	100	10	—	3452.184	La II	50	40	—	3449.57	Te	—	[5]	Bl
3454.318	Er	20	8	—	3452.057	Ce	2	—	—	3449.46	Tb	30	8	Ed
3454.256	Ce	2	—	—	3452.015	U	4	—	—	3449.450	W	3	3	—
3454.228	U	2	2	—	3451.919	W	6	7	—	3449.441	Co I	500 R	125	—
3454.223	Mo	5	5	—	3451.918	Fe I	100	60	—	3449.404	Zr	3	—	—
3454.208	Th	8	8	—	3451.903	Ce	2	—	—	3449.371	Re	100 r	—	—
3454.195	Ne I	—	[75]	IHu	3451.90	Pb I	—	10	Sx	3449.314	W	6	4	—
3454.18	Yt I	5	2	—	3451.808	Re I	100	—	—	3449.300	Nd	10	4	—
3454.165	Ti I	15	—	—	3451.749	Mo	10	20	—	3449.287	Th	5	5	—
3454.161	Ni II	—	2	—	3451.747	W	9	7	—	3449.23	U	2	—	—
3454.15	Eu	3	1	—	3451.703	Th	8	5	—	3449.196	Os	100	20	—
3454.149	Gd	15	15	—	3451.7	Pb II	—	[80]	Ea	3449.170	Co I	500 R	125	—
3454.134	Pt I	2	2	—	3451.70	Dy	3	2	—	3449.14	Te	10	2	Ed
3454.10	A	—	[10]	Rt	3451.70	Tb	8	—	Ed	3449.074	Mo	10	10	—
3454.07	Yb	40	250	—	3451.69	Hg II	—	[200]	Ps	3449.01	Ho	—	4 h	Ex
3454.06	Tb	80	30	Ed	3451.636	Cb	1	30	—	3448.971	Ir I	60	10	—
3454.05	Se	—	[8]	Bl	3451.629	Ce II	3	—	—	3448.953	Ru	70	20	—
3454.022	Ce	3	—	—	3451.619	Fe I	15	4	—	3448.929	Ta	18 w	2 h	—
3453.97	Cb	—	100	—	3451.619	Pb II	—	10	—	3448.856	Sm	6	—	—
3453.922	Th	4	4	—	3451.564	Ce	5	—	—	3448.865	Ce	5	—	—
3453.88	W	—	10	—	3451.523	Sm	3	2 h	—	3448.86	Tb	8	—	Ed
3453.88	Eu	2 w	—	—	3451.48	Pr	25	3	—	3448.833	W	10	9	—
3453.86	Pt	1	8	Sh	3451.479	Mn	2	—	—	3448.812	Yt II	18	18	—
3453.83	Ti II	—	[10]	El	3451.41	B II	—	100	En	3448.775	U	3	8	—
3453.784	Pr	6	—	—	3451.346	Pd II	—	400 h	—	3448.673	Cb	1	30	—
3453.780	U	4	3	—	3451.329	Ce	3	—	—	3448.645	Ce	6	—	—
3453.760	Ce	3	—	—	3451.241	Gd	50	40	—	3448.575	Rh I	25	2	—
3453.743	Cr I	30	25	—	3451.239	Er	10	1	—	3448.55	Rn I	—	[3]	Rs
3453.66	Tm	150	80	Me	3451.228	Fe	1	1	Do	3448.542	Mo	2	20	—
3453.654	Ti I	3	—	—	3451.209	U	5	5	—	3448.503	Sc I	8	3	—
3453.639	Ce	2	—	—	3451.149	Rh	50	2	—	3448.50	Dy	2	2	—
3453.570	U	5	8	—	3451.148	W	4	10	—	3448.43	Eu	3	2	—
3453.547	Sm	15	4	—	3451.12	La II	2	4 h	Me	3448.358	Co I	10	2	—
3453.531	Ti I	5 h	—	—	3451.045	V	—	60	Me	3448.31	Ca	—	2	Ad
3453.505	Co I	3000 R	200	—	3451.04	Hg	—	2	St	3448.288	Ce II	12	—	—
3453.502	Re I	40	—	—	3451.03	Ca	—	2	Ad	3448.27	Nd	8 d	2 h	—
3453.47	Eu	3	2	—	3450.981	Ce	2	—	—	3448.255	Ti I	6	—	—
3453.46	Kr	—	[3 h]	Me	3450.951	Yt I	3	—	—	3448.221	Cb	3 h	50	—
3453.46	Tb	15	3	Ed	3450.949	Th	8	8	—	3448.213	W	10	12	—
3453.354	Ta	—	10 h	—	3450.946	Er	20	—	—	3448.205	Pr	15	4	—
3453.328	Cr I	35	35	—	3450.917	Ce	3	—	—	3448.190	Cr I	12	1	—
3453.285	Re	20	—	—	3450.86	I II	—	[2]	Mu	3448.163	Eu	4	2	—
3453.241	Ce	8	—	—	3450.83	Cr	25	4	—	3448.09	S	—	[8]	Bl
3453.226	Sm	4	4 w	—	3450.81	Th	3	2	—	3448.08	Dy	2	2	—
3453.168	La II	50	40	—	3450.801	Ce	2	—	—	3448.069	Er	18	2	—
3453.13	Ho	30	20	Ex	3450.765	Ne I	—	[50]	IHu	3448.05	U	6	—	—
3453.12	Dy	5 wh	2	—	3450.762	Cb	2	50	—	3448.023	Ce	2	—	—
3453.10	Er	12	1	—	3450.751	W	4	6	—	3447.968	Ce	2	—	—
3453.10	Ne II	—	[7]	Bn	3450.735	Ti I	4	—	—	3447.95	W	8 d	7	—
3453.084	V	—	60	—	3450.73	Nd	8	2	—	3447.92	O II	—	[18]	Mh
3453.054	Os	20 s	10	—	3450.722	Ce	2	—	—	3447.874	Eu	2	—	—
3453.04	Er	12	1	Ed	3450.641	La I	10	2	—	3447.844	Pr	8	—	—
3453.023	Fe	30	15	—	3450.605	Mn	4	—	—	3447.802	Co	5 h	—	Dn
3453.0	Pb II	—	[2]	Ea	3450.590	Mo	—	20	—	3447.783	Sm	2	1	—
3452.971	Ta	5	2	—	3450.47	Er	5	—	—	3447.78	Dy	10	4	m
3452.962	U	2	—	—	3450.403	Ta	5	1 l	—	3447.78	Pt II	1	15	Sh

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
3447.760	Cr I	35	30	3445.260	Mo	8	2	3442.365	Eu	2 h	-
3447.736	Rh I	50	5	3445.216	Th	5	5	3442.362	U	2	-
3447.726	W	5	4	3445.2	bh Sr	12	-	3442.361	Fe I	50	15
3447.703	Ne I	-	[150]	3445.17	Eu	40	2	3442.361	Co II	-	8
3447.701	K I	100 R	75 R	3445.151	Fe I	300	150	3442.36	Tb	8	-
3447.67	Pt II	-	5	3445.149	Ta	10	2 h	3442.334	V I	15	15
3447.631	Th	3	2	3445.036	Mo	5	5	3442.251	Ce	8	-
3447.623	Nd	6	-	3444.91	Tb	8	-	3442.239	Fe II	2	-
3447.590	He I	-	[15]	3444.899	Ti I	2	-	3442.22	Te	-	[10]
3447.531	Ce	2	-	3444.871	Al	-	[5]	3442.203	Nd	15	6
3447.520	Er	10 d	-	3444.790	Ce	5	-	3442.183	Ce	10	-
3447.430	Cr I	35	35	3444.695	U	6	5	3442.044	Ni I	15	-
3447.365	Zr I	150 w	3	3444.681	Ta	5	2	3442.005	V I	10	8
3447.32	Tb	8	-	3444.613	Sm	8	10 w	3441.988	Mn II	75	75
3447.291	Ta	35	3	3444.608	W	9	8	3441.975	In II	-	[5]
3447.281	Fe I	100	60	3444.594	U	3	3	3441.970	W	8	6
3447.281	Co I	10	-	3444.58	Tb	15	8	3441.949	U	8	-
3447.28	Dy	10	2	3444.578	Sc I	5	-	3441.894	Ce	2	-
3447.280	Ga II	-	[2]	3444.460	Os	50	12	3441.872	Mo	5	8
3447.273	Ce	3	-	3444.419	U	1	2	3441.84	Hf	10	-
3447.27	Tm	7	3	3444.403	Ti I	5	-	3441.793	Gd	3	2
3447.22	Hg I	2	-	3444.311	Ti II	60	150	3441.68	Tb	15	3
3447.128	W	8	3	3444.307	Pr	5	-	3441.653	Cb	2	40
3447.123	Mo	25 r	20	3444.29	Er	2	-	3441.544	Ta	3	2 h
3447.015	Cr I	35	25	3444.279	Cb	1 h	50	3441.51	Tm	150	80
3447.001	Dy	50	8	3444.27	Se II	-	[35]	3441.453	Dy	50	5
3446.930	Cb	-	15	3444.26	Dy	9	2	3441.445	Mo	10	10
3446.910	Ta	2 W	150 W	3444.251	Ni I	10	-	3441.439	Cr I	80	90
3446.900	W	7	7	3444.185	Ce	5	-	3441.43	Sr	-	2 h
3446.88	Yb	10	50	3444.067	Ta	5	1	3441.41	Nd	10	2
3446.88	Nd	12	-	3444.047	Th	5	4	3441.401	Ce	10	-
3446.87	Er	15	1	3443.989	Sc I	3	-	3441.396	Pd I	800 h	2 h
3446.856	Ce	2	-	3443.88	Cs	-	[4]	3441.366	Th	8	-
3446.792	Fe	1	-	3443.878	Fe I	400	200	3441.33	I	-	[5]
3446.764	U	4	-	3443.790	Cr	30	25	3441.256	Re	40	-
3446.722	K I	150 R	100 R	3443.742	Cb	1	20	3441.233	Sm	3	-
3446.721	Ce	15	1	3443.70	Er	25	2	3441.210	Ce	35	5
3446.636	Ir I	8	2	3443.70	Ne II	-	[4]	3441.140	Co	8	-
3446.614	Zr I	15	1	3443.683	Ce	8	15	3441.135	Er	12	5
3446.603	Ti I	4	-	3443.651	Al	-	[10]	3441.115	Cr I	30	25
3446.6	Rn	-	[2]	3443.650	Fe	4	1	3441.07	I	-	[10]
3446.60	W	-	5	3443.644	Ti I	12	1	3441.06	Tb	8	-
3446.576	Re	2 w	-	3443.641	Co I	500 R	100	3441.019	Th	5	8
3446.546	Th	5	3	3443.603	Nd	8	2	3440.996	Eu	40	25
3446.51	Kr II	-	[50 wh]	3443.569	Zr II	8	8	3440.991	Fe I	300	200
3446.488	Ru	50	-	3443.535	U	2	2	3440.972	Zr	10	2
3446.46	Ga II	-	[3]	3443.525	Ce	8	-	3440.94	Dy	25	5
3446.40	Tb	50	-	3443.46	Dy	3	2	3440.88	Hf	3	-
3446.388	Co II	3	60	3443.387	Ti II	3	35	3440.819	Eu	5	-
3446.372	Eu	5	3	3443.350	Ce	2	-	3440.75	Xe	-	[3 h]
3446.36	Er	8	1	3443.308	Nd	8	2	3440.7	Rn	-	[18]
3446.34	Xe II	-	[12 h]	3443.29	Kr	-	[5 h]	3440.63	W II	5	20
3446.301	Ir I	30	4	3443.260	Mo	20	15	3440.610	Fe I	500	300
3446.263	Ni I	1000 R	50 h	3443.23	Er	5	-	3440.597	Al	-	[2]
3446.206	Ce	15	-	3443.22	Tb	8	-	3440.590	Cb	15	80
3446.18	Nd	8	4	3443.203	Co	25	2	3440.583	Zr	10	4
3446.088	Co I	60 h	-	3443.155	Ru I	30	-	3440.577	Ce	3	-
3446.085	Mo	1	40 h	3443.124	Th	6	6	3440.534	Rh	2	100
3446.070	Ru	50	6	3443.006	W	10	10	3440.507	Cu I	10	4
3445.939	Ru	10	-	3442.965	Re I	20	-	3440.504	Sm II	40	3
3445.912	Ta	7	3	3442.960	U	15	-	3440.472	Ce	15 w	-
3445.895	Nd	2	-	3442.955	Ce II	18	-	3440.46	Dy	4	-
3445.870	U	3 h	1	3442.926	Co I	400 R	15	3440.446	Zr I	10	-
3445.84	Eu	3	2	3442.82	Nd	8	-	3440.40	O	-	[20]
3445.808	Mo	3	-	3442.793	Cb	3	3	3440.37	Tb	30	8
3445.807	V I	15	12	3442.759	Pr	8	2	3440.237	Ta	18	50
3445.771	Fe	10	3	3442.683	Zr I	9	-	3440.205	Ru I	100	30
3445.748	Th	8	8	3442.677	Fe I	30	5	3440.131	Pr	10	2
3445.718	W	10	7	3442.67	Tb	15	-	3440.061	Nd	4	-
3445.714	U	3 h	3	3442.665	Mo	5	5	3440.055	Mn	2	-
3445.681	Cb	50	80	3442.66	Xe I	-	[3]	3440.05	K II	-	[40]
3445.621	Sm	150 R	10 R	3442.650	Cb	5	5	3440.003	Ce	2	-
3445.618	Cr	100	80	3442.638	Er	10	1	3439.992	W	8	5
3445.582	Dy	80	8	3442.631	Rh I	3	4	3439.990	Gd	70	50
3445.575	Er	20	8	3442.581	Th	6	1	3439.924	Cb	4	50
3445.566	Ti I	3	-	3442.58	A I	-	[10]	3439.897	U	6	-
3445.56	Ho	6	6	3442.559	Ni I	4	-	3439.872	Fe	15	7
3445.551	Os	80	15	3442.557	Ce	4	-	3439.832	Mo	3	3
3445.506	Ta	2 h	1 h	3442.53	Dy	2	4	3439.831	Ce	25	2
3445.475	Mo	2	25	3442.53	W II	-	12	3439.831	Os	15	8
3445.46	Er	6	-	3442.470	Mo	-	6	3439.785	Gd	50	50
3445.43	Hg	-	2	3442.41	Pr	3	-	3439.72	Tb	15	8
3445.403	W	7	5	3442.403	Pd I	5	2 h	3439.714	Th	10	12
3445.382	Th	10	8	3442.380	Ce II	25	3	3439.712	U	6	-
3445.301	Ru I	12	-	3442.37	Er	10	1	3439.676	Ru	30	-

3439.6—3431.8 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
3439.602	Sm II	2	-	3437.09	U	3 d	5 d	3434.500	Ta	35	18
3439.587	Eu	3	-	3437.074	Ta	2 r	-	3434.496	Mo	5	4
3439.553	Mo	3	3	3437.051	Fe	80	15	3434.486	Pr	3	-
3439.486	Os	40	12	3437.05	Ho	-	4 h	3434.373	Dy	80	30
3439.440	Ce	3	-	3437.027	Th	5	2	3434.367	Er	25	8
3439.434	U	10	-	3437.015	Ir I	20	15	3434.290	Ce	3	-
3439.418	Ir	4	-	3436.97	Th	15	-	3434.283	U	6	-
3439.409	Th	3	-	3436.962	Cb	20 r	50	3434.28	Kr	-	[2]
3439.40	Sc I	3	1	3436.960	Co I	10	-	3434.28	Sr I	2	-
3439.37	Cr	30	2	3436.959	Ce	5	-	3434.263	Rb II	-	[60]
3439.352	Al	-	[2]	3436.95	Dy	3	-	3434.16	Hg	-	2
3439.340	Rb	-	[200]	3436.94	I	-	[10]	3434.148	U	6	10
3439.339	Cb	2	3	3436.830	Cb	2	20	3434.142	Kr I	-	[8]
3439.33	Dy	10	5	3436.780	U	12	15	3434.134	Ce	5	-
3439.305	Ti I	18	6	3436.737	Ru I	300 R	150	3434.112	Cr I	30	25
3439.230	Mo	2	2	3436.727	Ce	3	-	3434.045	Mo	4	4
3439.212	Gd	60	35	3436.70	Sm	3	2	3434.026	V	1	20
3439.210	Nd	30	12	3436.687	Th	3 d	5	3434.025	Fe I	2 h	-
3439.05	Tb	15	-	3436.66	Ga II	-	[2]	3434.000	Th	12	12
3439.001	Ta	-	70 W	3436.629	Pr	15	-	3433.972	Cu I	5 h	-
3438.978	Sm	8	-	3436.543	Cu I	7	-	3433.950	Cb	-	10
3438.974	Mn II	20	20	3436.46	Pr	-	3 h	3433.906	Zr II	8	6
3438.97	Ne II	-	[4]	3436.46	Yb	5	30	3433.79	Yt	12	2 h
3438.97	Nd	6	-	3436.395	V	-	3	3433.780	W	9	7
3438.966	W	5	4	3436.336	Er	10	1	3433.768	V	-	3
3438.953	Th	10	12	3436.332	Ru I	12	8	3433.747	Cb	-	10
3438.952	Dy	25	9	3436.32	Ho	-	4 h	3433.728	Re	3	-
3438.924	U	3	-	3436.304	Ce	15	-	3433.707	U	5	6
3438.909	Co I	30	-	3436.199	Ce	5	-	3433.689	Ce	10	-
3438.881	Ce	3	-	3436.19	U	6	-	3433.685	Sm	5	5
3438.88	Kr II	-	[3 h]	3436.187	Cr I	50	50	3433.598	Cr I	50	35
3438.871	Mo	20	20	3436.136	Sm	3	-	3433.569	Ce	10	-
3438.84	Yb	20	100	3436.112	Fe II	5	15	3433.565	Mn	15	-
3438.815	W	9	6	3436.07	Eu	5	-	3433.558	Ni I	800 R	50 wh
3438.73	Te	-	[10]	3436.00	Ta	70 w	18 w	3433.552	Pr	30	3
3438.72	Yb	4	80	3435.979	Th	12	10	3433.449	Pd I	1000 h	500 h
3438.713	Co I	80 W	-	3435.91	Dy	3	4	3433.377	Mo	3	1
3438.697	U	2	3	3435.819	Cr	30	12	3433.314	Ir I	8	-
3438.611	Os	4	10 h	3435.753	Co I	8	-	3433.311	Cr II	30	150
3438.57	Tb	15	8	3435.734	Eu	12	9	3433.28	W	-	12 l
3438.519	In II	-	[10]	3435.715	W	9	12	3433.279	Mo	-	5
3438.474	Nd	6	1	3435.682	Ce	3	-	3433.26	Tb	15	8
3438.473	Er	9	1 h	3435.679	Cr I	20	12	3433.260	Ru I	60	25
3438.432	Hf	12	3	3435.65	Eu	4 h	-	3433.160	Cb	2 h	2
3438.419	Cb	1	50 wh	3435.61	Ho	-	4 h	3433.131	Er	25	2
3438.407	U	3	3	3435.587	Cb	-	10 wh	3433.091	Ce	25	5
3438.368	Ru I	70	35	3435.555	Sc I	12	4	3433.088	Cb	10	2
3438.339	In II	-	[50]	3435.53	Tb	8	3	3433.06	W	7 d	4
3438.32	Er	12	1	3435.53	U	15 d	-	3433.045	Fe	50	1 h
3438.31	Eu	5	-	3435.489	Ni I	3	-	3433.040	Co I	1000 R	150
3438.31	Pr	25 w	1 h	3435.488	Cr	8	1	3432.997	Gd	50	40
3438.306	Fe	10	3 h	3435.451	Mo	6	-	3432.985	Nd	20	10
3438.235	Hf II	25	25	3435.434	Nd	20	4	3432.90	Tb	15	8
3438.235	Ce	3	-	3435.432	Ti	10	1	3432.87	Dy	5	4
3438.230	Zr II	250	200	3435.4	Rn	-	[18]	3432.870	Mo	5	5
3438.210	W	7	3	3435.40	Mo	-	60 h	3432.851	Cr	10	1
3438.094	Ir I	6	-	3435.373	V	-	20	3432.845	Co	3	-
3438.066	Ce	15	-	3435.27	Dy	4	2	3432.81	La II	3	3
3438.054	Sm II	9	3	3435.256	Sm II	5	3	3432.775	Ce	4	-
3437.953	Yt	3	-	3435.256	Os	20	10	3432.741	Ru	70	40
3437.952	Fe	15	7	3435.243	W	6	5	3432.701	Cb	10	100
3437.934	U	6	10	3435.207	Ce	20	-	3432.630	Sm	5 hs	3 W
3437.873	V I	2	1 h	3435.205	Eu	35	2	3432.58	Dy	25	5
3437.813	Ce	10	-	3435.200	U	10	-	3432.523	Eu	9	-
3437.773	V I	4	2	3435.186	Ru I	60	20	3432.493	U	1	5 h
3437.73	Xe	-	[2 wh]	3435.075	I II	-	[7]	3432.472	Ru	4	-
3437.720	Re I	100	-	3435.064	Eu	12	3	3432.424	Cb	10	3
3437.692	Co I	150 Wh	-	3434.92	Tb	30	-	3432.419	Ce	3	-
3437.671	U	6	-	3434.893	Rh	1000 r	200 r	3432.406	Zr II	9	9
3437.64	Er	10	1	3434.89	Hf	5	-	3432.373	Ru	5	-
3437.64	Tm	10	15	3434.889	Os	20	3	3432.35	Tb	15	3
3437.614	Sm	3	2 h	3434.805	U	2 h	1 h	3432.324	Cr	25	6
3437.603	Pr	6	-	3434.790	Mo	50	12	3432.318	Co I	60 W	-
3437.498	Ir I	30	3	3434.762	Th	8	8	3432.232	Mo	-	25
3437.49	Sb	2 h	8	3434.757	Ir I	10	-	3432.209	Ru I	50	12
3437.373	Ta	7	300 wh	3434.757	Pr	20	2	3432.091	Rh I	3	-
3437.36	Pb I	-	10	3434.75	Ho	-	4 h	3432.09	Ho	6	8
3437.324	Ce	12	-	3434.74	Eu	3	-	3432.051	Pr	5	-
3437.310	Th	6	2	3434.730	Hg	-	15	3432.029	Ir	3	-
3437.280	Ni I	600 R	40	3434.72	Rb	-	[40]	3431.998	Cr	25	4
3437.220	W II	3	10	3434.646	Ag I	2 h	-	3431.990	U	2 h	3
3437.216	Mo	25	25	3434.634	Er	12	2	3431.948	Cb	8	5
3437.162	N II	-	[35]	3434.614	U	12	1 h	3431.897	Sm	12	-
3437.137	Zr II	15	10	3434.61	Yb	5	20	3431.86	Tb	15	-
3437.115	Sm II	15	2	3434.54	Tb	15	3	3431.85	Ti I	5 h	5 wh

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3431.848	Pt I	5	3	-	3429.7	Rn	-	[60]	Wo	3427.02	Pr	-	2	-
3431.816	Th	5	10	-	3429.681	Co	30	-	-	3427.014	Fe I	1	-	-
3431.816	U	2	-	-	3429.64	A II	-	[3]	Rt	3426.939	Th	3	2	-
3431.815	Re I	4	-	-	3429.638	Ce	3	-	-	3426.933	Zr I	2	-	-
3431.814	Fe	50	20	-	3429.6	Pb II	-	[5]	Ea	3426.879	Ce	2	-	-
3431.79	Dy	20	5	-	3429.600	W	10	12	-	3426.790	Mo	10	2	-
3431.739	Ce	8	-	-	3429.542	Ru	60	25	-	3426.76	Ho	6	6 h	Ex
3431.722	Kr I	-	[20]	IHu	3429.483	Sc I	12	2	-	3426.732	Ta	20	10	-
3431.69	Cr	12	2	-	3429.47	Cs	-	[3]	Bs	3426.722	Pt I	8	1	-
3431.67	Yt	3	2 h	-	3429.442	Dy	50	5	-	3426.636	Fe I	80	60	-
3431.65	Se II	-	[5]	Kh	3429.42	Yt II	2	4	-	3426.583	Ce II	20	1	-
3431.62	Pr	15	2	-	3429.392	Th	6	6	-	3426.570	Cb	5	200	-
3431.59	Cr	6	-	-	3429.34	Tm	10	-	Me	3426.53	Sm	3 w	-	-
3431.575	Co I	500 R	40	-	3429.327	U	3	6	-	3426.5	Tl	-	3	Cx
3431.57	Nd	-	6	-	3429.314	Ta	1	2	-	3426.456	Ru	6	-	-
3431.569	Zr II	10	8	-	3429.29	Eu	2 hd	2 d	-	3426.454	Ba	2	-	-
3431.556	Ir	8	-	Ab	3429.215	Er	5	-	-	3426.453	Co I	15	2	-
3431.54	U	6	6	-	3429.206	Sc I	12	7	-	3426.45	I	-	[7]	Ke
3431.498	Ce	12	1	-	3429.19	Ho	10	15	Ex	3426.446	Ce	2	-	-
3431.45	Kr I	-	[2]	Me	3429.176	Ce	5	-	-	3426.44	Eu	8	2	-
3431.39	Tb	8	-	Ed	3429.1	bh Ca	4	-	L	3426.393	U	8	12	-
3431.38	Yb	8	-	-	3429.09	Tb	8	3	Ed	3426.388	Fe I	80	20	-
3431.358	Sc I	10	2	-	3429.043	Cb	10 l	5 l	-	3426.37	Tb	8	-	Ed
3431.35	Pb	-	2	Sx	3429.032	U	18 r	2 h	-	3426.327	Gd	3	3	-
3431.297	Ir	4	-	-	3429.00	Dy	4	4	-	3426.32	Fe I	5	2	-
3431.284	Cr	35	8	-	3429.000	Th	6	3	-	3426.27	Kr I	-	[2]	Me
3431.23	Bi II	-	[150]	MI	3428.955	Ti I	10	1	-	3426.23	W	-	7	-
3431.20	Tm	50	50	Me	3428.944	Ce	2	-	-	3426.208	Ce	30	6	-
3431.196	Ce	8	-	-	3428.925	Nd	20	8	-	3426.2	Rn	-	[5]	Pe
3431.173	Cb	-	5 h	-	3428.916	Al II	-	[50]	Sy	3426.192	Ta	7	3 h	-
3431.138	U	10	2	-	3428.890	Mo	1	25	-	3426.191	Re I	30	-	-
3431.12	Yb	40	15	-	3428.870	Ce	4	-	-	3426.19	P II	-	[50]	Gu
3431.066	Cb	8 wr	-	-	3428.868	Ir I	5	-	Ab	3426.187	Sm	8	2	-
3431.06	Er	6 d	1 h	-	3428.830	Re	3	-	-	3426.07	Dy	2	-	-
3431.03	Kr	-	[8 hl]	Me	3428.789	Cb	10	10	-	3426.04	Yb	40	15	-
3431.03	Dy	2	-	-	3428.782	U	12	-	-	3426.002	Mo	10	10	-
3431.024	Th	4	4	-	3428.77	Eu	12 s	2	-	3425.98	Cr	25	2	-
3431.019	Ce	10	-	-	3428.762	Co I	8	-	-	3425.964	Ru I	30	4	-
3430.99	Yt I	2	-	-	3428.76	Ne II	-	[18]	Bn	3425.95	Sb	-	8 h	-
3430.982	Gd	4	2	-	3428.753	Fe	5	2	-	3425.948	Th	5	5	-
3430.944	Zr I	2	-	-	3428.71	Tb	8	3	Ed	3425.944	Ce	20	-	-
3430.938	Ta	50	70	-	3428.697	Ce II	10	-	-	3425.94	W	-	6	-
3430.90	Eu	5	2	-	3428.634	Ru I	30	12	-	3425.92	Tb	8	3	Ed
3430.885	W	7	5	-	3428.62	Tm	15	15	Me	3425.918	Gd	10	8	-
3430.874	Ti I	5	-	-	3428.511	Re I	10	-	-	3425.848	Cb	50 r	30	-
3430.848	Ce	12	-	-	3428.51	Ca	2	4	Ad	3425.842	U	10	1 h	-
3430.83	Bi II	-	[200]	MI	3428.502	Ce	5	-	-	3425.679	Ce	2	-	-
3430.772	Ru I	70	45	-	3428.47	Dy	3	2	-	3425.63	Tm	100	50	Me
3430.716	U	2	2	-	3428.469	Gd	5	3	-	3425.60	Dy	2	-	-
3430.665	Ce	4	-	-	3428.46	Yb	25	80	-	3425.582	Fe II	2	4	Do
3430.61	Tb	15	8	Ed	3428.405	Rh	5	-	-	3425.548	W	6	5	-
3430.600	Ce	4	-	-	3428.394	Er	4	1	-	3425.479	Mo	8	8	-
3430.58	W II	-	3	-	3428.366	Hf II	15	15	-	3425.47	Sb	-	[8]	Lg
3430.558	Th	5	4	-	3428.361	Cb	3	3	-	3425.424	Cb	30 r	300	-
3430.551	Ti I	5	3	-	3428.33	Eu	3	-	-	3425.42	Tb	8	-	Ed
3430.532	Zr II	50	50	-	3428.309	Ru	100	100	-	3425.41	U	4	3	-
3430.53	Bi II	-	[60]	MI	3428.233	Co	100 W	2	-	3425.367	Ir	3	-	-
3430.510	Pr	25	3	-	3428.197	Fe I	50	50	-	3425.35	Ho	40	40	Ex
3430.51	Si	-	2 h	Sy	3428.13	Ho	40	40	Ex	3425.344	Ce	10	-	-
3430.484	U	12 r	5 h	-	3428.055	Ce	3	-	-	3425.282	V	8	4	-
3430.44	A	-	[5]	Rt	3427.995	Th	5	5	-	3425.254	Sm II	3	1	-
3430.408	Ir	3 h	-	Ab	3427.961	Sm	8	2	-	3425.209	Nd	8	4	-
3430.4	Cs	-	[4]	Bs	3427.930	Pt I	50	6	-	3425.190	Th	5	6	-
3430.371	Eu	5	3	-	3427.902	Mo	4	4	-	3425.119	U	6	3	-
3430.342	Th	2 d	1 d	-	3427.834	Ce	3	-	-	3425.08	Tm	200	300	Me
3430.316	Ce	10	2	-	3427.768	Co I	6	-	-	3425.070	V	25	20	-
3430.30	Bi II	10	[35]	MI	3427.756	Eu	5	-	-	3425.06	Dy	40	5	-
3430.289	Zr I	10	-	-	3427.718	W	9	8	-	3425.03	W	5	4	-
3430.278	Pr	25	4	-	3427.71	Kr II	-	[30]	Me	3425.02	Eu	50	4	-
3430.262	W	6	4	-	3427.671	Os	80	15	-	3425.015	Fe	70	40	-
3430.252	Ce	5	-	-	3427.66	Cr	40	1	-	3424.971	I	-	[25]	Ke
3430.222	Mo	3	4	-	3427.622	Re I	50	-	-	3424.943	Kr I	-	[15]	IHu
3430.21	Dy	2	-	-	3427.605	Ce II	5	-	-	3424.92	Ca	-	2	-
3430.18	Ba	-	2	Sd	3427.57	La II	2	3	Me	3424.87	P II	-	[100]	Gu
3430.176	U	6	1 h	-	3427.466	Th	2	2	-	3424.826	W	4	-	-
3430.10	Bi II	-	[25 d]	MI	3427.449	Cb	30 r	30	-	3424.825	Zr II	15	9	-
3430.09	P	-	[30]	Gu	3427.438	Os	30	12	-	3424.810	U	8	12	-
3430.066	Os	4	5	-	3427.42	O	-	[10 h]	Mh	3424.765	Sm	5	2	-
3430.035	Ir I	3	-	Ab	3427.283	Ce	12	10 h	-	3424.758	Mo	5	3	-
3429.987	Os	-	8	-	3427.13	K II	-	[5]	Bn	3424.693	Ir I	20	2	-
3429.97	Tm	100	100	Me	3427.121	Ce	8	-	-	3424.634	Zr II	2	-	-
3429.91	Kr II	-	[3 h]	Me	3427.121	Fe I	50	50	S	3424.604	Re I	300 W	-	-
3429.904	Th	6	6	-	3427.121	Na	10	-	-	3424.601	Gd	30	-	-
3429.856	Ce	12	-	-	3427.087	Ce	5	-	-	3424.600	Mo	8	5	-
3429.749	Sm II	8	2	-	3427.05	Eu	4	-	Kn	3424.596	U	3	2	-

3424.5—3417.1 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3424.557	U	20	15	-	3421.760	Ir	6	-	-	3419.61	Yb	6	15	-
3424.506	Co I	80	2	-	3421.72	Pt	2 h	-	m	3419.550	Ta	10 r	3 s	-
3424.450	Ta	35 r	7 r	-	3421.72	Cr	12	-	-	3419.54	Tb	15	8	Ed
3424.449	W	2	15	-	3421.714	Ce	3	-	-	3419.423	Ir I	30	5	-
3424.42	Er	9	1	-	3421.69	U	8	8	-	3419.400	Re I	80	-	-
3424.382	Rh I	30	5	-	3421.687	Os	30	10	-	3419.359	U	6	-	-
3424.366	Ce	3	-	-	3421.667	Eu	5	5	-	3419.358	Sc I	3	-	-
3424.35	Tb	8	3	Ed	3421.64	A	-	[10]	Rt	3419.328	Ce	2	-	-
3424.288	Fe I	200	150	-	3421.64	Cr	2 h	6	-	3419.288	W	10	7	-
3424.14	Yt	3	2	-	3421.64	Ho	20	20	Ex	3419.252	Ru I	30	2	-
3424.135	U	1	2	-	3421.626	Co I	20	2	-	3419.246	Ce	2	-	-
3424.075	Nd	2	2	-	3421.579	Re	15	-	-	3419.244	Re I	15	-	-
3424.020	Ce	8 w	-	-	3421.542	Ce II	5	-	-	3419.241	Pr	10	2	-
3423.991	Th	6	3	-	3421.48	Ba I	2	2 h	Sd	3419.24	P II	-	[100]	Gu
3423.95	Tb	8	8	Ed	3421.45	Hf II	3	4	Me	3419.22	Er	2	-	Ed
3423.928	Gd	30	20	-	3421.428	W	-	7	-	3419.175	Hf	15	4	-
3423.913	Ne I	-	[50]	IHu	3421.419	Zr I	3	-	-	3419.159	U	6	-	-
3423.9	La II	-	2	-	3421.38	U	8 d	2 d	-	3419.154	Fe	2	-	-
3423.864	V I	25	25	-	3421.348	Co I	3	-	-	3419.146	Th	8	10	-
3423.853	Ce	20 w	2	-	3421.342	Ni I	30	8	-	3419.107	Zr II	6	4	-
3423.842	W	6	3	-	3421.32	Dy	7	5	-	3419.04	I	-	[5]	Bl
3423.833	Co II	15	20	-	3421.297	Sm	2	-	-	3418.958	Mo	8	10 h	-
3423.82	Br	-	[3]	Bl	3421.250	Mo	6	6	-	3418.95	Tb	15	8	Ed
3423.82	Dy	3	4	-	3421.24	Pd I	2000 R	1000 R	-	3418.931	Th	2 d	3 h	-
3423.765	Cb	15	5	-	3421.212	Cr II	50	200	-	3418.930	Ce	20	2	-
3423.73	Kr II	-	[20 hs]	Me	3421.212	Ta	1	3 wh	-	3418.88	Fe	1	-	-
3423.711	Ni I	600 R	25	-	3421.204	Ni I	4	-	-	3418.850	U	3	3	-
3423.699	Ir	5	-	-	3421.189	Th	10	10	-	3418.809	Eu	8	2	-
3423.66	Si	-	2	Sy	3421.162	Cb	10 w	50 w	-	3418.782	Th	6	8	-
3423.648	Cb	-	10 w	-	3421.16	Rb	-	[20]	Ok	3418.735	Gd	50	25	-
3423.63	Nd	6	-	-	3421.134	W	3 d	20	-	3418.731	Er	9	2	-
3423.616	Ce	3	-	-	3421.112	Pr	10	1	-	3418.528	Sc I	5	2 h	-
3423.504	Sm	2 h	-	-	3421.071	Ce	6	-	-	3418.519	Mo	10	12	-
3423.477	Ce	4	-	-	3421.065	Er	9	1	-	3418.515	V I	25	20	-
3423.303	W	7	6	-	3421.01	Ba I	3	2 h	Sd	3418.512	Fe I	150	100	-
3423.24	Dy	4	2	-	3420.955	Ce	5	-	-	3418.51	A I	-	[3]	Ms
3423.172	Ti I	4	-	-	3420.82	Ca	-	2 h	-	3418.510	Sm II	50	10	-
3423.131	Th	5	6	-	3420.81	Dy	5	2	-	3418.467	Pr	30	3	Kn
3423.110	Eu	10	9	-	3420.795	Mn	8	-	-	3418.39	U	10	2	-
3423.1	Ra II	-	[5]	Rs	3420.792	Co I	80	2	-	3418.39	Yb	3	5	-
3423.05	U	12 d	15 d	-	3420.758	Re I	40	-	-	3418.37	Xe I	-	[2]	Me
3423.05	Tb	15	-	Ed	3420.741	Ni I	30	3	-	3418.363	Ir	3	-	-
3422.964	Cd II	-	3	-	3420.73	Xe II	-	[25]	Hu	3418.36	Sr	1	2	Sd
3422.896	Co I	18	4	-	3420.706	V	-	10	-	3418.341	Mo	4	1	-
3422.878	Ni I	10	5	-	3420.631	Cb	5	50	-	3418.310	Ta	8	2 h	-
3422.878	Ca	-	2	-	3420.63	O	-	[7 h]	Mh	3418.176	Fe	4	1 h	-
3422.878	Dy	15	5	-	3420.54	La II	-	2	Me	3418.14	Dy	15	5	-
3422.87	Er	3 d	1	-	3420.534	Ce II	8	-	-	3418.134	Sm	20	-	-
3422.849	Cb	1	30	-	3420.514	Sm	3	2	-	3418.11	Cs	-	[6]	Sv
3422.80	W	-	6	-	3420.487	Ir I	20	2	-	3418.01	Cr	8	-	-
3422.786	Cb	3 r	5	-	3420.483	Co I	3	2	-	3418.007	Ne I	-	[50]	IHu
3422.784	Co	7	-	-	3420.42	I	-	[10]	Bl	3417.98	Pr	4	-	-
3422.777	Mo	-	30 h	-	3420.358	W	7	6	-	3417.91	Tb	8	-	Ed
3422.760	Sm	9	3	-	3420.35	Yb	9	-	-	3417.904	Ne I	-	[500]	IHu
3422.739	Cr II	35	125	-	3420.34	Tb	50	15	Ed	3417.897	Ce	20	-	-
3422.713	Gd	8	6	-	3420.338	Ba I	8 r	2 h	-	3417.860	Cb	5	5	-
3422.708	Ce	30	10	-	3420.32	Si	-	2	Sy	3417.843	Fe I	150	100	-
3422.661	Ti II	4	10	-	3420.183	Er	4 h	2 h	-	3417.799	Re I	40 r	-	-
3422.660	Fe I	100	50	-	3420.176	Ce II	35	2	-	3417.795	Co I	30	2	-
3422.657	Th	3	1	-	3420.17	I	-	[3]	Bl	3417.730	Th	3	4	-
3422.62	Er	4	-	-	3420.166	Cu I	15	3 h	-	3417.72	Tb	8	3	Ed
3422.57	Dy	10 d	-	-	3420.16	Cd II	-	5	-	3417.72	Ca	2	4	Ad
3422.507	Ce	18	-	-	3420.099	Cb	3 h	3 wh	-	3417.71	Ne II	-	[18]	Bn
3422.493	Fe	40	10	-	3420.09	Nd	15	2	-	3417.68	A I	-	[3]	Ms
3422.476	Sm	2	-	-	3420.078	Ru	60	8	-	3417.673	Co I	25	-	-
3422.471	Er	6	-	-	3420.07	U	5	3	-	3417.638	Er	10	4	-
3422.466	Gd	80	100	-	3420.07	W	4 w	12	-	3417.528	Nd	8	6	-
3422.44	Tb	3	15	Ed	3420.037	Mo	15	15	-	3417.512	Mo	5	4	-
3422.426	W	10	9	-	3420.02	U	2	3	-	3417.501	Th	3	-	-
3422.420	Ce	8	-	-	3420.00	Xe I	-	[2]	Me	3417.450	Ce	30	5	-
3422.4	Rn	-	[18]	Pe	3419.99	Dy	2	2	-	3417.42	Eu	4	2	-
3422.352	U	18 r	15 r	-	3419.985	Ag	1	2 h	-	3417.396	Cd II	10	15	-
3422.332	Ni I	10	5	-	3419.963	U	5	2	-	3417.353	Ru I	1	70	Sv
3422.309	Mo	10	10	-	3419.962	Er	10	3	-	3417.345	Hf	10	2	-
3422.291	Rh I	12	-	-	3419.91	O	-	[3 h]	Mh	3417.336	Ir I	3	-	Ab
3422.275	Os	20	10	-	3419.90	Cr	12 h	-	-	3417.298	U	3	1	-
3422.26	Pr	5	3	-	3419.852	Eu	18	3	-	3417.29	Er	10	3	-
3422.260	V	-	15 h	Me	3419.769	Sm	10	6	-	3417.262	Fe I	6	-	-
3422.215	Ce	2	-	-	3419.748	Ta	50 w	5 h	-	3417.262	Cb	5 h	-	-
3422.189	Sm II	3	-	-	3419.70	W	-	8	-	3417.21	F	-	[10]	Di
3422.14	Fe	2	-	-	3419.699	Fe	7	2	-	3417.18	Cb	-	10	-
3422.07	Dy	3	2	-	3419.67	Cr	8 h	-	-	3417.164	Fe	5	-	-
3422.063	Sm	5	-	-	3419.659	Zr I	18	-	-	3417.160	Co I	400 R	-	-
3422.000	Ce	5	-	-	3419.652	Pd I	10	2	-	3417.140	Dy	15	5	-
3421.800	Ta	-	18	-	3419.643	Dy	20	2	-	3417.12	Ga	-	5	Kl

Wave-length	Element	Intensity Arc Spk., [Dis.]	R	Wave-length	Element	Intensity Arc Spk., [Dis.]	R	Wave-length	Element	Intensity Arc Spk., [Dis.]	R
3417.12	Th	3	3	3414.765	Ni I	1000 R	50 wh	3412.45	Yb	15	5
3417.067	Pt	3	-	3414.736	Co I	200 W	-	3412.407	Th	2	3
3417.064	V I	35	25	3414.663	F II	-	[15] Di	3412.36	U	12 d	12 d
3417.026	Ta	3	15	3414.661	Zr II	20	15	3412.339	Co I	1000 R	100
3417.02	F II	-	[20] Di	3414.642	Ru I	50	5	3412.338	Hf	10	-
3417.00	Mo	-	6	3414.63	U	3 d	1 d	3412.334	Ce II	10	-
3416.957	Ti II	7	50	3414.605	Ce	5	-	3412.295	Mo	1	20
3416.957	Gd	50	30	3414.60	Ca	-	2 h	3412.274	Rh	300	60
3416.89	Yb	7	15	3414.55	Ag I	4	-	3412.261	Eu	2 h	4
3416.879	Eu	5	-	3414.52	Sm	-	4	3412.095	U	6	10
3416.87	Ne II	-	[12] Bn	3414.513	Th	6	8	3412.078	Ru	30	-
3416.861	Ce	10	1	3414.49	Yt	3	2	3412.05	W	5 d	5 d
3416.854	U	2	2	3414.46	A II	-	[5] Rt	3412.04	F II	-	[3] Di
3416.80	A I	-	[5] Ms	3414.422	Mo	-	20	3412.016	Mo	5	5
3416.76	K	-	[5] Bn	3414.36	U	8 d	1 d	3412.013	Gd	2	2
3416.735	Eu	6	6	3414.313	Ce	8	-	3411.94	Sr I	4	-
3416.700	Ce	12	-	3414.305	Cr	8 wh	-	3411.89	Er	6	1 h
3416.687	Zr	4	-	3414.30	Dy	2	2	3411.835	Ce	12 s	-
3416.678	Fe I	1	-	3414.298	Nd	10	2	3411.8	Bi II	-	[15 h] MI
3416.674	Sc I	5	2 h	3414.282	Ru	12	-	3411.791	Zr I	3	-
3416.623	W	7	20	3414.26	Ho	-	10	3411.789	Th	6	6
3416.60	Tm	10	-	3414.245	Os	10	8	3411.76	La II	5	25 hl
3416.58	F	-	[10] Di	3414.196	V I	20	40	3411.73	Ta	8	2
3416.556	Ce	20	-	3414.168	Ce II	8 s	-	3411.716	Ta	5	2
3416.551	U	4 h	2	3414.14	Ta	18 W	100 W	3411.680	Ti I	10	2
3416.545	V I	7	3	3414.066	Cb	10	8	3411.66	F II	-	[6] Di
3416.46	Ho	30	40	3414.02	Eu	4 h	2	3411.636	Ru	80	20
3416.45	Er	20 d	6 d	3413.980	Ru	3	-	3411.58	Tm	8	5
3416.45	F II	-	[10] Di	3413.939	Ni I	300	10	3411.577	Ir I	7	1
3416.422	Th	4	5	3413.895	Sm II	6	2	3411.569	Ce	12	-
3416.309	U	6	2	3413.891	I	-	[15] K	3411.56	Ho	6	6
3416.291	Fe	2	-	3413.836	Ba I	-	5	3411.532	U	10	8
3416.24	Tb	15	8	3413.806	U	4	10	3411.52	Dy	3	2
3416.19	Nd	8	-	3413.794	Dy	40	9	3411.434	Ce	10	-
3416.182	Ru	50	4	3413.78	Kr	-	[2 h] Me	3411.362	Th	3	3
3416.143	Mo	4	25	3413.76	Tb	50	30	3411.356	Fe	80	30
3416.132	Er	8	1	3413.74	Hf II	12	10	3411.313	Cs	-	[10] Sv
3416.125	U	12	5	3413.74	S	-	[8] Bi	3411.275	Sm	5	2
3416.028	Fe II	2 h	2 h	3413.737	Re	25	-	3411.24	Yb	7	-
3416.025	Mo	2	10	3413.714	Ru	3	-	3411.22	Sm	3	1
3416.015	Sm	6	1	3413.69	Er	5	1	3411.21	Dy	2	2
3415.993	Ti I	15	2	3413.657	Mo	12	6	3411.20	Tb	8	-
3415.974	Cb	50	50	3413.636	Ta	5	2 h	3411.133	Fe	2	-
3415.886	Th	1 d	5	3413.614	Ce	3	-	3411.112	Ce	5	-
3415.866	Ta	10	3	3413.537	W	10	10	3411.094	Mo	4	3
3415.865	U	12	5	3413.51	P	-	[70] Gu	3411.080	U	1	2
3415.783	Co II	100 R	20	3413.501	Cb	5 W	2 h	3411.051	Cr	80 wh	3 wh
3415.78	Cu	10 Wh	3 Wh	3413.48	Fe	2	-	3411.028	Nd	8	2
3415.75	Cl	-	[4 h] Bi	3413.478	Ni I	500	15	3411.018	W	5	4
3415.744	Ir I	7	1 h	3413.452	Ce	4	-	3410.900	Fe I	10	2
3415.708	Pr	25	4	3413.409	Th	5	5	3410.876	W	10	9
3415.648	Rb II	-	[30] Rr	3413.400	Zr II	8	5	3410.82	F	-	[2] Di
3415.633	Mo	10	5	3413.370	Mo	8	8	3410.78	Ag I	8	-
3415.614	Ce	10	-	3413.36	Er	8	1	3410.735	Ru	4	30
3415.613	U	1	2	3413.343	Cu I	20	7	3410.72	Dy	3	2
3415.57	Cr	8 wh	-	3413.329	Ce	8	-	3410.71	Tb	15	3
3415.553	Nd	15	6	3413.279	Gd	5	2	3410.681	U	2	3 h
3415.55	W	7	6	3413.231	Ce	4	-	3410.65	Ho	10	10
3415.534	Fe I	60	20	3413.213	Cb	1	40	3410.62	Mo	-	25
3415.530	Co I	20	-	3413.20	Xe II	-	[4 wh] Hu	3410.620	Eu	4	2
3415.43	Tb	8	-	3413.14	Pr	-	3	3410.488	W	7	6
3415.419	W	3	4	3413.135	Fe I	400	300	3410.404	U	3	3
3415.38	Ca	2	3	3413.13	Ne II	-	[7] Bi	3410.40	Tb	15	8
3415.35	Dy	4	-	3413.03	Sn	-	[15] Ar	3410.381	Sm	10	-
3415.325	U	3	-	3413.019	Th	5	2	3410.280	Sm	4	2 h
3415.307	Ce	3	-	3412.964	W	10	9	3410.25	Ho	20	15
3415.273	Mo	5	5	3412.955	Mo	-	15	3410.248	Zr II	50	50
3415.270	Ta	3	35	3412.935	Cb	5	150	3410.234	Nd	8	4
3415.241	Ir	10	2 h	3412.892	Ta	20	3	3410.226	Ce	12	-
3415.224	Os	5	8	3412.86	Ho	-	4	3410.176	Fe	30	20
3415.13	Th	2	1	3412.8	Sn	-	5 Wh	3410.171	Hf II	25	60
3415.12	Tb	8	-	3412.8	bh Sr	4	-	3410.169	W	-	15
3415.079	Pr	4	3	3412.800	Ru I	50	5	3410.112	Ir I	3	-
3415.069	Ce	8	-	3412.743	W	2	12	3410.1	Bi II	-	[5 h] MI
3414.953	Sm II	10	2	3412.740	Os	15	-	3410.10	Eu	3 d	2 d
3414.950	Zr I	2	-	3412.731	Eu	20	8	3410.05	Tm	30	5
3414.92	Ho	30	30	3412.693	U	6	-	3410.031	Sm	5	-
3414.880	V	-	4 h	3412.640	Fe	8	-	3410.022	Ir I	8	2
3414.830	Dy	35	5	3412.633	Co I	1000 R	40	3409.99	U	6	-
3414.82	Ne II	-	[4] Bn	3412.60	Tm	10	2	3409.984	Pr	7	1
3414.80	Kr II	-	[10] Me	3412.595	Ir I	9	2 h	3409.953	Eu	4	-
3414.79	Er	8	1	3412.571	Sm	4	1	3409.94	Tb	15	3
3414.773	Eu	40	-	3412.481	Ob	2 h	20 h	3409.929	I II	-	[5] Mu
3414.767	Pr	7	-	3412.47	Dy	2	2	3409.92	Cl II	-	[5] Ks
3414.766	Ce	5	-	3412.469	Yt I	4	4	3409.908	Cb	8	3

3409.8—3402.8 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3409.89	Kr I	—	[2]	Me	3407.7	Yt	—	5 h	Me	3405.444	Ce	6	—	—
3409.872	Er	10	1	—	3407.695	Ce	8 h	—	—	3405.411	Cb	80	50	—
3409.87	Yt II	3	12	—	3407.639	Mo	4	5	—	3405.326	Bi	40	10	—
3409.863	Ce	2	—	—	3407.635	Th	3	3	—	3405.277	W	7	6	—
3409.829	Re I	30	—	—	3407.633	W	7	5	—	3405.277	Ru	3	—	—
3409.81	Br	—	[3]	Bl	3407.599	Ce	2	—	—	3405.22	Cr	12	1	—
3409.809	Ti II	18	40	—	3407.596	Gd	100 r	100	—	3405.204	Mo	8	5	—
3409.775	Ir	4	—	Ab	3407.48	Sn II	—	[2]	Mo	3405.16	Kr II	—	[80 whl]	Me
3409.77	O II	—	[25 I]	Mh	3407.461	Fe I	400	400	S	3405.160	V I	30	15	—
3409.719	U	5	3	—	3407.42	Ta	—	18 h	—	3405.120	Co I	2000 R	150	—
3409.675	Nd	4	—	—	3407.355	U	2	2	—	3405.094	Ti I	20	2	—
3409.647	Eu	7	2	—	3407.35	O II	—	[40 I]	Mh	3405.03	Ag	3	2 h	—
3409.646	Co I	15	—	—	3407.304	Ni II	—	25	—	3404.99	Dy	4	4	—
3409.618	W	5	4	—	3407.303	Cb	—	30	—	3404.97	Ti II	—	2 d	—
3409.578	Ni I	300	—	—	3407.303	Er	4	—	—	3404.960	V I	8	1	—
3409.568	Ru I	20	2	—	3407.27	Cr	50 wh	1 wh	—	3404.933	U	3	2	—
3409.502	Ce	8	—	—	3407.243	Ce	25	2	—	3404.918	Au	—	3 h	—
3409.49	Xe	—	[5 whl]	Hu	3407.238	Rh I	5	—	—	3404.910	Ce	18	2	—
3409.45	Dy	3	2	—	3407.205	Ti II	12	50	—	3404.864	Mo	6	4	—
3409.438	W	7	6	—	3407.168	Dy	20	5	—	3404.832	Zr II	40	35	—
3409.418	Zr	3	—	—	3407.143	Hf	10	1	—	3404.803	W	8	6	—
3409.405	Ce II	10	—	—	3407.10	Tb	8	3	Ed	3404.77	Ne II	—	[12]	Bl
3409.397	Cr	60 wh	1 wh	—	3407.09	Te	—	[5]	Bl	3404.767	Sm	2	2	—
3409.377	U	10	2	—	3407.00	La II	2	4	Me	3404.763	Nd	4	6	—
3409.301	Gd	5	5	—	3406.994	Nd	8	4	—	3404.754	Fe I	2	—	—
3409.277	Ru	100	40	—	3406.96	Er	10	1	—	3404.724	Re I	100	—	—
3409.273	Th	6	8	—	3406.948	Cb	1	30	—	3404.71	Tb	3	8	Ed
3409.27	Tb	8	—	Ed	3406.942	Ce	2	—	—	3404.654	Th	4	4	—
3409.25	Nd	20	6	—	3406.935	Ta	70	15	—	3404.580	Pd I	2000 R	1000 R	—
3409.24	Er	8	1	—	3406.93	P	—	[50]	Gu	3404.52	La I	9	2	—
3409.24	W	—	5	—	3406.93	Cr	4	1	—	3404.448	In II	—	[10]	Ps
3409.20	Fe	40	4	—	3406.926	U	2	2	—	3404.428	Ce	12	—	—
3409.188	Cb	10	100	—	3406.917	Ru	4	—	—	3404.425	V	—	50 h	Me
3409.177	Co I	1000 R	125	—	3406.88	Ne II	—	[18]	Bl	3404.359	Fe I	100	50	—
3409.1	bh Ca	12	—	L	3406.837	V I	25	12	—	3404.342	Mo	20	25	—
3409.095	V I	12	4	—	3406.831	W	9	12	—	3404.33	P II	—	[50]	Gu
3409.06	Ho	6	4 h	Ex	3406.805	Fe I	100	60	—	3404.304	Fe I	25	25	—
3409.02	F II	—	[6]	Di	3406.77	Te	—	[15]	Bl	3404.297	In II	—	[18]	Ps
3409.011	W	5	4	—	3406.75	Dy	3	—	—	3404.24	K II	—	[30]	Bn
3409.008	U	6	2	—	3406.667	Os	30	10	—	3404.24	Tb	15	3	Ed
3408.97	Kr I	—	[2]	Me	3406.664	Ta	70 w	18 s	—	3404.224	W	8	7	—
3408.953	Ce	5	—	—	3406.626	Cs	—	[10]	Sv	3404.163	Ta	5	1	—
3408.891	Co I	8	—	—	3406.613	Cb	8	5	—	3404.14	W	—	4	—
3408.86	Tb	8	3	Ed	3406.61	Ca	—	3	Ad	3404.131	In II	—	[18]	Ps
3408.804	Ce	10	—	—	3406.591	Ru	50	3	—	3404.13	Er	8	—	—
3408.777	Zr	9	—	—	3406.582	W	—	9	—	3404.130	Ce	18	—	—
3408.765	Cr II	35	100	—	3406.56	F II	—	[3]	Di	3404.10	Yb	9	30	—
3408.756	Os	40	10	—	3406.546	Rh I	50	8	—	3403.91	Sb II	2	10 h	—
3408.750	Th	5	1	—	3406.545	Sm	4	—	—	3403.894	U	2	2	—
3408.68	F II	—	[2]	Di	3406.442	Fe	30	10	—	3403.846	Ce	8	—	—
3408.678	Er	10	3	—	3406.441	Eu	4	—	—	3403.790	W	4	3	—
3408.678	Cb	5	50	—	3406.426	Ce	2	—	—	3403.775	Ru I	8	—	—
3408.676	Re	100	—	—	3406.42	Tb	8	—	Ed	3403.750	Cb	5	4	—
3408.668	Sm	20	10	—	3406.392	Nd	8	2	—	3403.728	Ce	3	—	—
3408.648	Th	5	5	—	3406.364	Ce II	8	—	—	3403.70	In	—	18	Sq
3408.634	Mo	1	25	—	3406.279	Os	30	12	—	3403.684	Zr II	15	15	—
3408.6	Bi II	—	[15]	MI	3406.278	U	10	5	—	3403.678	Er	9	1	—
3408.599	U	4	—	—	3406.27	Ho	—	4 h	Ex	3403.66	Tb	8	—	Ed
3408.575	Sm II	4	2	—	3406.243	Th	4	4	—	3403.653	Cd I	800	500 h	IMe
3408.51	Yb	—	10	—	3406.215	Ce	10	—	—	3403.603	Ce	15	—	—
3408.468	Ce	2	—	—	3406.17	A I	—	[30]	Ms	3403.595	Cr	35	3	—
3408.394	Ce	8	—	—	3406.133	Cb	30	30	—	3403.568	Pr	8	2	—
3408.39	Ca	—	3 r	Ad	3406.12	Eu	15 w	4	—	3403.546	U	10	10	—
3408.383	W	10	7	—	3406.095	Ce	5	—	—	3403.49	Cb	—	5	—
3408.376	Cb	10	5	—	3406.094	W	—	8	—	3403.459	Nd	10	4	—
3408.21	Ho	6	4 h	Ex	3406.065	V	—	3	—	3403.45	Dy	4	4	m
3408.21	W	—	5	—	3406.042	Pd I	3	2	—	3403.432	Ni I	40	—	—
3408.188	Ce	2	—	—	3406.01	Tb	15	8	Ed	3403.369	Ti I	12	2	—
3408.157	Dy	12	5	—	3405.980	F	—	[10]	Di	3403.360	V I	30	15	—
3408.136	N II	—	[10]	Fl	3405.977	Ce	25	3	—	3403.353	Mo	20	3	—
3408.134	Pt I	250 W	60	—	3405.937	Mo	25	25	—	3403.322	Cr II	30	200	—
3408.079	Zr II	10	9	—	3405.890	Re I	150	—	—	3403.32	Fe	7	3	—
3408.048	Sm	2	—	—	3405.880	Ru	50	2	—	3403.275	Th	3 d	3 d	—
3408.044	Ce	2	—	—	3405.833	Fe	3	1	—	3403.27	Dy	6	5	—
3408.04	Cr	40 wh	1 wh	—	3405.816	Co	30 R	—	—	3403.217	U	4	2	—
3408.024	Nd	4	—	—	3405.807	Ce	10	—	—	3403.183	Ce	10	—	—
3407.999	V I	12	6	—	3405.746	U	12	—	—	3403.163	Eu	5	2	—
3407.976	Cb	8	10	—	3405.681	Nd	4	—	—	3403.15	Nd	20	15	—
3407.83	Tb	3	8	Ed	3405.68	Mo	1 d	3 d	—	3403.085	Sm	15	8	—
3407.83	Ho	6	4	Ex	3405.67	Eu	6 w	—	—	3403.03	Eu	5	—	—
3407.80	Dy	150	9	—	3405.663	Dy	10	5	—	3403.015	Cb	20 w	80 w	—
3407.791	Er	15	8	—	3405.660	Bi I	60	—	—	3402.992	Ta	—	25 w	—
3407.77	I	—	[10]	Bl	3405.631	Ce	4	—	—	3402.873	Zr II	10	10	—
3407.759	Hf II	20	25	—	3405.578	Fe	1	—	—	3402.87	Er	8	1	—
3407.742	Rh I	6	—	—	3405.561	Th	3	4	—	3402.812	Mo	5 d	100	—

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3402.80	Bi I	3	-	To	3400.162	Ti I	10	1	-	3397.56	Pr	3	3	-
3402.791	Ir I	10	-	-	3400.117	Os	20	10	-	3397.519	Th	8	4	-
3402.79	Kr II	-	[2]	Me	3400.110	Na II	-	[5]	Fr	3397.517	Cb	-	15	-
3402.78	Tb	8	3	Ed	3400.100	Mo	1	10	-	3397.503	Tm	100	50	Me
3402.775	U	4	1	-	3400.07	Xe I	-	[2]	Me	3397.465	W	4	4	-
3402.77	Hg	-	[18]	Ps	3400.00	Cs I	30	-	Bv	3397.453	Nd	2	2	-
3402.767	W	5	4	-	3399.993	Gd	15	15	-	3397.418	Ta	3	1	-
3402.701	Th	10	15	-	3399.974	Ru I	4	-	-	3397.39	Dy	2	2	-
3402.683	Ir I	3	-	-	3399.97	Tb	15	3	Ed	3397.34	Ho	-	4 h	Ex
3402.571	V I	60	25	-	3399.963	Cb	10	2	-	3397.320	Cb	-	50	-
3402.542	Ce	3	-	-	3399.958	U	6	3	-	3397.257	Hf	20	3	-
3402.523	Zr II	2	-	-	3399.95	Tm	50	40	Me	3397.248	Ni	2	-	-
3402.522	Ru	5	-	-	3399.93	Sb II	1	2	-	3397.213	Bi I	100 wh	50	-
3402.514	Hf	20	3	-	3399.840	Sm	10	3	-	3397.213	Fe	1	-	-
3402.511	Os I	200	15	-	3399.810	U	5	2	-	3397.21	Tb	15	-	Ed
3402.463	Sm II	50	10	-	3399.795	Hf II	60	100	-	3397.210	Re	15	-	-
3402.457	Eu	4	4	-	3399.711	Cb	15	15	-	3397.20	U	12	-	-
3402.44	U	2 d	2 d	-	3399.696	Rh I	500	60	-	3397.187	Cs	-	[6]	Sv
3402.422	Ti II	15	90	-	3399.688	Sm	5	1	-	3397.108	Th	2	3	-
3402.399	Cr II	25	80	-	3399.67	Cd II	-	5	-	3397.083	Ce	12	-	-
3402.33	Tb	30	15	Ed	3399.601	Er	5	-	-	3397.07	Lu	50	20 r	Me
3402.315	Mo	5	1	-	3399.53	Cr	1	60	-	3397.05	Yt I	7	5	S
3402.27	Yb	6	3	-	3399.528	U	3	4	-	3396.978	Fe I	125	25	S
3402.262	Fe	150	150	-	3399.41	Nd	10	4	-	3396.85	Rh I	1000 w	500	-
3402.244	Cu I	45	10	-	3399.400	Cb	20	30	-	3396.83	Er	12 s	2	-
3402.184	Ce	10	-	-	3399.375	Ru	60	3	-	3396.825	Mo	4	3	-
3402.17	Ho	-	4	Ex	3399.349	Zr II	100	40	-	3396.825	Ru I	20	-	-
3402.16	Cd II	-	5	-	3399.34	Dy	3	-	-	3396.82	Lu	30	1	Me
3402.074	Gd	15	18	-	3399.336	Fe I	200	200	S	3396.780	Pd I	10	-	-
3402.064	Co I	10	2	-	3399.299	Re I	200 w	-	-	3396.732	Th	5	1	-
3402.031	Th	5	6	-	3399.29	F II	-	[6 h]	Di	3396.724	Ce	15	-	-
3402.020	Ce	2	-	-	3399.234	Fe I	5	-	-	3396.658	Zr II	8	5	-
3402.017	Cb	-	50	-	3399.193	Nd	8	2	-	3396.58	Pr	4	4	-
3402.00	V	-	2	Me	3399.10	Tb	15	8	Ed	3396.58	Eu	100	10	-
3401.98	Dy	5	2	-	3399.074	Ce	2	-	-	3396.515	V I	15	12	-
3401.913	Co I	20	-	-	3399.04	Sn	-	25 Wh	-	3396.457	Co I	3	-	-
3401.9	bh Pb	20	-	L	3398.995	U	15	-	-	3396.398	Th	2 d	2 d	-
3401.890	W II	7	40	-	3398.98	Ho	40	60	Ex	3396.385	Fe I	1	-	-
3401.870	U	8	4	-	3398.94	Er	40 wd	7 wd	-	3396.372	Cb	2	150	-
3401.859	Os I	200	20	-	3398.927	W	4	12	-	3396.333	Zr II	12	10	-
3401.830	Er	12	6	-	3398.925	Ce	15	1	-	3396.324	Cu I	30	3	hs
3401.796	Zr I	4	-	-	3398.881	Nd	10	2	-	3396.32	Yb	4	20	-
3401.770	Ir I	20	3	-	3398.811	Co	20	-	-	3396.315	Hg	-	10	St
3401.766	Ni II	-	15	-	3398.790	Re	15	-	-	3396.184	Ni I	8	-	-
3401.739	Ru I	100	50	-	3398.722	Ce	10	-	-	3396.183	Sm II	35	15	-
3401.649	Th	4	6	-	3398.67	U	2 d	1 d	-	3396.178	Nd	10	8	-
3401.617	Co I	18	-	-	3398.65	Yb	10	-	-	3396.169	Dy	20	10	-
3401.59	Ho	-	4	Ex	3398.639	Ce	4	-	-	3396.13	Ho	-	4	Ex
3401.521	Fe I	150	90	S	3398.634	Ti I	20	6	-	3396.05	Er	12 d	3	-
3401.505	Ru	30	2	-	3398.575	Os	20	10	-	3395.942	Fe	3	-	-
3401.49	I II	-	[10]	Mu	3398.548	Th	5	2	-	3395.94	Hf	10	-	-
3401.40	Kr I	-	[5]	Me	3398.498	U	6	1	-	3395.929	Cb	10	5	-
3401.393	W	-	6	-	3398.47	Eu	-	2	-	3395.91	Sb	-	4 wh	-
3401.342	V I	15	8	-	3398.44	Sm	1	3 h	-	3395.87	S	-	[15]	Bi
3401.28	Dy	2	2	-	3398.35	Tb	30	8	Ed	3395.816	W	8	7	-
3401.23	Sr I	3	-	Fl	3398.34	Dy	4	2	-	3395.79	Er	4	-	-
3401.226	Cb	2	40	-	3398.339	Ce	10	-	-	3395.725	Cb	1	30	-
3401.213	U	8	8	-	3398.33	W	-	4 wh	-	3395.719	Os	40	12	-
3401.201	Er	10	1	-	3398.327	Ta	35	18 l	-	3395.615	Mo	4	-	-
3401.195	Re	10 w	-	-	3398.327	Nd	12	4	-	3395.61	Cr	2	100	-
3401.174	Os	40	15	-	3398.29	La II	2	3	Me	3395.58	U	3 d	1 d	-
3401.166	Ni I	40	1	-	3398.276	Er	12 l	2	-	3395.534	Nd	8	2	-
3401.060	Gd	2	1	-	3398.265	V I	12	10	-	3395.524	V I	25	10	-
3401.03	Th	1 d	2 d	-	3398.256	U	12	6	-	3395.50	Xe II	-	[2]	Hu
3401.014	U	10	8	-	3398.254	Cb	15	40	-	3395.478	W	7	6	-
3401.01	Yb	12	30	-	3398.220	Fe	2	1	-	3395.476	Cu I	30	7	-
3400.980	Rh I	10	2	-	3398.14	Cs I	60	-	Bv	3395.43	Pr	7	-	-
3400.877	Pr	10	1	-	3398.097	W	10	9	-	3395.414	Ce	10	-	-
3400.86	Tb	30	8	Ed	3398.02	Tm	30	40	Me	3395.381	Th	4	4	-
3400.765	Zr	2	-	-	3397.99	Dy	3	2	-	3395.375	Co I	400 R	50	-
3400.754	Ru I	30	1	-	3397.945	U	4	2	-	3395.360	Mo	-	25	-
3400.75	U	6	3 h	-	3397.918	Zr I	8	-	-	3395.35	P	-	[50]	Gu
3400.604	Ru	10	-	-	3397.90	A I, II	-	[20]	Ms	3395.35	Eu	15	3	-
3400.60	Yb	6	-	-	3397.843	V I	30	20	-	3395.345	Nd	10	2	-
3400.57	Ho	-	4	Ex	3397.763	Sm	9	3	-	3395.329	Fe II	-	2	-
3400.550	W	5	3	-	3397.76	La II	5	8	-	3395.315	U	6	5	-
3400.53	Tb	15	8	Ed	3397.758	Os	12	10	-	3395.280	Er	8	1	-
3400.469	Co I	5	-	-	3397.688	Mo	20	20	-	3395.175	Eu	2 h	2	-
3400.467	U	8	2	-	3397.683	Re	6	-	-	3395.127	Th	3	2	-
3400.395	V I	100	8	-	3397.646	Zr	8	-	-	3395.126	Gd	10	12	-
3400.351	Nd	10	4	-	3397.642	Fe I	10	2	-	3395.036	Ce	15	-	-
3400.327	U	2	2	-	3397.60	Tb	15	-	Ed	3395.02	Th	30	-	Ed
3400.254	Ce	8 W	-	-	3397.597	Hf	20	3	-	3394.987	Nd	8	2	-
3400.211	Hf	15	2	-	3397.580	V I	3	25	-	3394.983	Hf II	20	50	-
3400.18	Rb	-	[5]	Ok	3397.564	Fe	1	2	-	3394.98	Yt	4	2	-

3394.9—3387.5 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3394.975	Cb	2	50	-	3392.475	Ir	2	4 h	-	3389.764	Re	15	-	-
3394.92	W	-	5	-	3392.384	Re	3 h	-	-	3389.749	Fe I	15	-	-
3394.916	Co I	7	-	-	3392.338	Cb	20 r	30	-	3389.744	Er	20	3	-
3394.891	Rh I	15	5	-	3392.313	Fe I	125	80	-	3389.744	U	4	3 h	-
3394.860	Er	15	3	-	3392.31	A I	-	[3]	Ms	3389.67	Kr II	-	[5]	Me
3394.84	Dy	2	2	-	3392.256	Ce	3	-	-	3389.645	Th	6	8	-
3394.818	Sm	2	-	-	3392.2	Rn	-	[2]	Pe	3389.643	Ce	8	-	-
3394.807	Mo	-	10	-	3392.197	Ti	2	1	-	3389.620	Ti I	6	-	-
3394.804	Th	4	6	-	3392.173	Mo	15	2	-	3389.599	Er	10	2	-
3394.776	U	8	6	-	3392.05	Ho	6	8	Ex	3389.59	Tb	8	-	Ed
3394.77	Tb	15	3	Ed	3392.040	Th	10	15	-	3389.55	Ho	-	4	Ex
3394.76	I	-	[5]	Bl	3392.016	Cu I	7	-	-	3389.524	Os	10	5	-
3394.63	Zr II	2	3	-	3392.014	Fe	20	6	-	3389.52	W	-	4 s	-
3394.63	Ho	8	8	Ex	3392.01	Tb	15	8	Ed	3389.500	Ru I	60	18	-
3394.613	Pr	25	5	-	3391.992	Eu	40	5	-	3389.464	Th	3	-	-
3394.61	W	6	3	-	3391.99	Dy	4	-	-	3389.46	Dy	2	2	-
3394.593	Os	20	12	-	3391.989	Er	30	12	-	3389.425	Re	25	-	-
3394.589	Hf II	20	25	-	3391.975	Zr II	300	400	-	3389.419	Ce	5	-	-
3394.589	Fe I	150	80	-	3391.948	Nd	6	-	-	3389.4	Pb II	-	[10]	Ea
3394.575	Ti II	70	200	-	3391.890	Ru	50	6	-	3389.38	Ag	-	2 h	Fn
3394.503	Th	-	3 h	-	3391.884	Ce	3	-	-	3389.325	Sm II	40	20	-
3394.47	W II	1	10	-	3391.851	Mo	1	30	-	3389.325	Nd	20	20	-
3394.44	Yb	8	20	-	3391.841	Sm	2	3	-	3389.270	Zr	2 h	-	-
3394.394	Er	10	1	-	3391.73	Rh I	3 d	1	-	3389.219	Fh I	6	-	-
3394.295	Cr	15	150	-	3391.72	Tb	15	3	Ed	3389.202	Ce II	5	-	-
3394.283	U	8	1	-	3391.717	Th	1	3	-	3389.15	Ca	-	[6]	Bs
3394.22	F II	-	[3 hd]	Di	3391.593	Ce	10	-	-	3389.039	Pd I	10	-	-
3394.151	Th	4	4	-	3391.591	Cb	1	5	-	3388.964	Fe I	3	-	-
3394.144	Pr	5	1	-	3391.55	Lu	10	2	Me	3388.952	Mo	3	3	-
3394.138	Ce II	15	1	-	3391.536	Mo	4	-	-	3388.941	Cb	1	80	-
3394.127	Re	20	-	-	3391.531	W	10	10	-	3388.863	Dy	20	5	-
3394.099	Er	10	1	-	3391.434	Cr II	4	150	-	3388.85	Cd II	-	6	Vs
3394.087	Fe I	7	2	-	3391.398	U	6	-	-	3388.827	W	10	12	-
3394.083	Cb	5 r	3	-	3391.372	Cr	12	-	-	3388.823	Ta	5	1	-
3394.069	Eu	10	-	-	3391.330	Cb	5	3	-	3388.755	Ti II	12	35	-
3393.99	Dy	4	3	-	3391.286	Os	2	5	-	3388.730	Mo	3	3	-
3393.920	Ce	30	1	-	3391.27	Rn I	-	[8]	Rs	3388.710	Cr I	40	4	-
3393.917	Fe	6	1	-	3391.237	Re	2 h	-	-	3388.709	Ru I	80	20	-
3393.91	U	5 d	4 d	-	3391.13	Dy	3 d	3 d	-	3388.639	Os	3	3	-
3393.839	Cr II	15	125	-	3391.122	Sm II	8	2	-	3388.63	Tb	15	-	Ed
3393.810	Cb	1 h	15	-	3391.10	Yb	10	40	-	3388.626	Fe	5	1	-
3393.769	Eu	3	2	-	3391.100	W	10	10	-	3388.612	La I	10	2	-
3393.757	W	5	4	-	3391.050	Ni I	400	40	-	3388.6	Rn	-	[10]	Pe
3393.752	A I	-	[250]	IHu	3391.04	Hg	-	2 h	St	3388.582	Yt I	2	2	-
3393.653	Mo	20	10	-	3391.04	U	2	2	-	3388.582	Th	4	5	-
3393.641	Nd	10	4	-	3390.911	Pr	9	2	-	3388.54	A	-	[25]	Rt
3393.629	Gd	2	2	-	3390.910	Ru I	12	-	-	3388.494	Co I	3	-	-
3393.61	Au	-	3 h	-	3390.868	Ir I	5	-	Ab	3388.485	Ce	5	-	-
3393.60	Ho	6	4	Ex	3390.812	Ce	8	-	-	3388.46	Ne II	-	[25]	Bn
3393.583	Dy	100	10	-	3390.81	Dy	2	2	-	3388.451	Mo	10	8	-
3393.58	Tb	30	8	Ed	3390.800	Cb I	20	-	-	3388.41	U	3 d	1 d	-
3393.574	Ce	10	-	-	3390.787	Eu	12	8	-	3388.407	Ce II	8	-	-
3393.572	Er	25	10	-	3390.781	Th	2	2	-	3388.37	Tb	8	-	Ed
3393.530	Bi	-	2 R	Om	3390.773	Cr	30	3	-	3388.35	A I	-	[20]	Ms
3393.46	Cl	-	[15]	Bl	3390.765	V I	40	15	-	3388.338	Ta	2	15	-
3393.381	Fe I	6	3	-	3390.75	Ho	6	8	Ex	3388.299	Zr II	50	40	-
3393.25	Cs	-	[3]	Bs	3390.682	Ti I	35	10	-	3388.180	Sm	3	1	-
3393.25	Eu	8	4	-	3390.67	Sr I	4	-	Fl	3388.173	Co I, II	250 R	3	-
3393.232	Th	3	3	-	3390.630	Cb	30	50	-	3388.05	Xe II	-	[2]	Hu
3393.19	Tm	5	-	Me	3390.60	Tb	15	8	Ed	3388.036	Pr	20	3	-
3393.124	Zr II	30	25	-	3390.56	Ne II	-	[4]	Bl	3388.025	Nd	10	4	-
3393.111	Rb II	-	[40]	Rr	3390.515	Ce II	20	1	-	3387.988	Ir	5	-	-
3393.106	Mo	-	10	-	3390.412	Cb	10	3 wh	-	3387.960	Nd	3	-	-
3393.1	Rn	-	[10]	Wo	3390.403	Co I	30	2	-	3387.928	Cb	-	20 w	-
3393.01	Tb	15	-	Ed	3390.40	La II	2	2	Me	3387.922	Th	2	-	-
3392.992	Ni I	600 R	-	-	3390.389	U	18	10	-	3387.872	Zr II	100	100	-
3392.992	U	2	2	-	3390.380	V I	12	8	-	3387.866	Ir	3	-	-
3392.99	Dy	2	2	-	3390.365	Th	4	3	-	3387.837	Ti	60	125	-
3392.988	Cu I	5	-	-	3390.29	A I	-	[3]	Ms	3387.836	Os I	100	15	-
3392.987	Cr II	10	100	-	3390.26	O II	-	[100]	Mh	3387.780	Ce	20	2 h	-
3392.970	Th	3	3	-	3390.25	Yb	10 w	-	-	3387.752	Cb	8	5	-
3392.94	La II	4	3	Me	3390.242	Re	40	3	-	3387.750	Mo	10	8	-
3392.87	Cl	-	[15]	Bl	3390.105	Mo	5	2	-	3387.73	Er	6 d	-	-
3392.811	Hf	20	3	-	3390.080	Fe	2	-	-	3387.693	Co II	2	15	-
3392.81	A I	-	[100]	Ms	3390.06	Hg	-	50 wh	Cn	3387.668	Sm	6	3	-
3392.81	Ca	1	2	Ad	3390.02	Tb	15	3	Ed	3387.632	W	-	12	-
3392.784	Ce II	10	-	-	3389.95	U	6	4	-	3387.63	Tb	8	-	Ed
3392.78	Ne II	-	[20]	Bn	3389.90	Ti I	3 h	-	-	3387.630	Fe	5	-	-
3392.735	V I	1	30	-	3389.89	Ca	1 h	3	Ad	3387.613	U	5	-	-
3392.713	Ti I	20	8	-	3389.85	A I	-	[20]	Ms	3387.59	Cl	-	[12]	Bl
3392.657	Fe I	300	200	-	3389.837	Ce	8	-	-	3387.58	A I	-	[20]	Ms
3392.63	K II	-	[10]	Bn	3389.833	Hf II	30	40	-	3387.576	Cb	3	5	-
3392.589	Ir I	3	-	-	3389.83	Yt I	4	2	-	3387.553	Ce	2	-	-
3392.537	Ru	100	40	-	3389.8	bh Sr	12	-	L	3387.52	Rn I	-	[5]	Rs
3392.534	Gd	40	25	-	3389.799	Mo	15	20	-	3387.50	Yb	30	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3387.466	Ni I	2	—	—	—	3385.027	Dy	25	8	—	—	3381.95	U	4 d	6 d	—	—
3387.457	Ta	5	2	—	—	3385.005	Th	3	5	—	—	3381.806	I	—	[10]	—	Ke
3387.418	Eu	4	2	—	—	3384.98	Se II	—	—	[25]	Bl	3381.80	Ti II	—	[12]	—	El
3387.411	Fe	35	8	—	—	3384.948	Cu II	—	3	—	Sh	3381.77	Pr	3	1	—	—
3387.380	V I	8	8	—	—	3384.897	W	9	12	—	—	3381.761	Mo	4	4	—	—
3387.35	S	—	[8]	—	Hn	3384.867	Sm	3	2	—	—	3381.73	Eu	2	3	—	—
3387.342	Ce	4	—	—	—	3384.815	Cu I	10	3	—	Hs	3381.691	U	6	—	—	—
3387.232	Ru I	30	2	—	—	3384.86	K II	—	—	[30]	Bn	3381.669	Os	15	1	—	—
3387.226	Ta	3	1	—	—	3384.702	Hf II	10	12	—	—	3381.60	Tb	8	3	—	Ed
3387.11	Kr	—	[7 h]	—	Me	3384.666	Nd	20	20	—	—	3381.498	Co I	100 W	—	—	—
3387.110	Zr I	2	—	—	—	3384.663	Sm II	10	8	—	—	3381.491	Ce	20	—	—	—
3387.106	Ag	—	3 h	—	—	3384.658	Cb	2	8	—	—	3381.49	A I	—	[20]	—	Ms
3387.075	Nd	4	2 h	—	—	3384.644	Cr I	40	1	—	—	3381.445	Rh	4	—	—	—
3387.065	Sm II	8	3	—	—	3384.616	Mo	30 r	25	—	—	3381.442	Ti I	2	—	—	—
3387.061	Co I	2	—	—	—	3384.614	W	5	3	—	—	3381.438	La I	5	2	—	—
3386.993	Cb	10	15	—	—	3384.599	V I	60	40	—	—	3381.421	Cu I	20	7	—	—
3386.905	Zr I	2	—	—	—	3384.596	Os	20	3	—	—	3381.376	Pr	3	—	—	—
3386.859	Ce	8 W	—	—	—	3384.47	Ti II	—	—	[6]	El	3381.375	Th	5	12	—	—
3386.792	W	4	2	—	—	3384.446	U	10	8	—	—	3381.370	Ir I	3	—	—	Ab
3386.627	Os	10	4	—	—	3384.4	Rn	—	—	[5]	Pe	3381.337	Fe I	5	2	—	—
3386.603	Sm	2 h	—	—	—	3384.339	W	7	6	—	—	3381.335	Ti I	5	—	—	—
3386.601	U	4	1	—	—	3384.25	Er	6	1	—	—	3381.32	Er	20	4	—	—
3386.58	Dy	2	2	—	—	3384.241	Cr I	35	—	—	—	3381.124	Cu I	15	5 h	—	—
3386.578	Pr	2	—	—	—	3384.220	U	3	3	—	—	3381.121	Ce	10	—	—	—
3386.544	Ta	—	3 h	—	—	3384.14	Hf II	15	15	—	m	3381.119	Mo	3	2	—	—
3386.521	Cr	30	2	—	—	3384.13	Xe II	—	—	[20 h]	Hu	3381.11	Kr II	—	[20 wh]	—	Me
3386.518	Nd	15	4	—	—	3384.127	Nd	4	4	—	—	3381.079	Er	15	2	—	—
3386.505	W	—	12	—	—	3384.09	Er	6	1	—	—	3381.052	Nd	4 d	4	—	—
3386.504	Th	6	10	—	—	3384.069	Ce	8	—	—	—	3381.04	Zn II	—	[20]	—	Va
3386.49	Tb	15	8	—	Ed	3384.04	Yb	—	20	—	Me	3381.00	Ti II	—	[20]	—	El
3386.405	Ce	2	—	—	—	3384.003	Os	80	5	—	—	3380.998	Fe II	—	2	—	—
3386.39	Ca	1 h	8	—	Ad	3383.981	Mo	1	30	—	—	3380.994	Ir I	15	1	—	—
3386.307	Mo	1	—	—	—	3383.980	Fe I	200	100	—	I	3380.98	I	—	[3]	—	Ke
3386.30	Xe II	—	[2 h]	—	Hu	3383.925	Ce II	8	—	—	—	3380.938	Cb	—	200	—	—
3386.285	Nd	10	4	—	—	3383.920	Co I	60	—	—	—	3380.916	Ce	10	—	—	—
3386.251	Ru I	30	2	—	—	3383.857	I II	—	—	[3]	Ke	3380.915	Ru	10	2	—	—
3386.244	Cb	5	100	—	—	3383.82	Pt	1	8	—	—	3380.910	La II	200	100 h	—	—
3386.24	Ne II	—	[4]	—	Bn	3383.800	Cb	15	5	—	—	3380.90	U	3	3 h	—	—
3386.173	Ir	15	2	—	—	3383.78	Er	12	1	—	—	3380.89	Tb	8	—	—	Ed
3386.138	Os	30	8	—	—	3383.78	Tb	8	—	—	Ed	3380.885	Ni I	200	12	—	—
3386.133	U	6	15	—	—	3383.761	Ti II	70	300 R	—	—	3380.883	Th	5	2	—	—
3386.101	W	9	7	—	—	3383.73	Pr	12	3	—	—	3380.861	Cb	5	—	—	—
3386.10	Hf	5	6	—	Me	3383.698	Fe I	100	70	—	—	3380.717	Cu II	—	5	—	Sh
3386.089	Ce	8	—	—	—	3383.687	Ce	20	2	—	—	3380.711	Sr II	150	200	—	ISn
3386.025	Pr	9	—	—	—	3383.554	Mo	5	1	—	—	3380.703	Sm	2	1	—	—
3385.946	Ti I	80	25	—	—	3383.449	Nd	2	—	—	—	3380.700	U	5	10	—	—
3385.940	Os	40	10	—	—	3383.402	U	6	3	—	—	3380.695	W	—	3	—	—
3385.876	Mo	6	10	—	—	3383.394	Ce	12	1	—	—	3380.674	Pd I	150 w	2 h	—	—
3385.822	W	7	10	—	—	3383.376	Pr	15	3	—	—	3380.636	Rh I	4	—	—	—
3385.81	S	—	[25]	—	Hn	3383.279	Ce	8	—	—	—	3380.62	K II	—	[30]	—	Bn
3385.810	Cb	3 h	5 h	—	—	3383.137	Sb	40	50	—	—	3380.60	Tb	15	3	—	Ed
3385.792	V	—	5 h	—	Me	3383.12	W	—	18	—	—	3380.574	Ni I	600 R	100	—	—
3385.788	Zr	3	—	—	—	3383.120	Th	5	10	—	—	3380.519	Gd	2	2	—	—
3385.781	Rh I	30	10	—	—	3383.05	Yt	3	3	—	m	3380.489	Cb	3	2 h	—	—
3385.774	Re	20	—	—	—	3382.90	Zr	3	—	—	—	3380.410	Cb	20	3	—	—
3385.749	Ce	4	—	—	—	3382.892	Er	18	1	—	—	3380.280	Ti II	25	150 r	—	—
3385.707	Ru I	50	4	—	—	3382.891	Ag	1000 R	700 R	—	—	3380.25	Eu	15	10	—	—
3385.668	Cb	5	8	—	—	3382.888	Ce	8	—	—	—	3380.215	Mo	1	25	—	—
3385.664	Ti I	25	10	—	—	3382.83	Yt	3	3	—	m	3380.175	Ru I	60	15	—	—
3385.597	Ir I	5	—	—	—	3382.811	Nd	200	10	—	—	3380.15	Tb	3	—	—	Ed
3385.559	Co I	6	—	—	—	3382.80	Tb	15	8	—	Ed	3380.114	Yt II	7	12	—	—
3385.55	Fe	2	—	—	—	3382.698	Ce	8	—	—	—	3380.111	Fe	200	25	—	I
3385.537	Th	6	8	—	—	3382.683	Cr II	35	—	—	—	3380.11	Pr	3	1	—	—
3385.50	Lu	30	4	—	Me	3382.68	O I	—	—	[12]	Mh	3380.083	Cb	5	5	—	—
3385.474	Ru I	8	2	—	—	3382.675	U	4	4	—	—	3379.968	W	4	—	—	—
3385.443	Fe	3	—	—	—	3382.660	Pr	10	2	—	—	3379.966	Mo	25	1	—	—
3385.41	U	12 d	8 d	—	—	3382.606	W	10	12	—	—	3379.961	Cu II	2 h	3 h	—	Sh
3385.41	Tb	8	—	—	Ed	3382.566	Pd II	—	2 h	—	—	3379.930	Ti II	2	5	—	—
3385.4	Cu I	2	—	—	Sh	3382.530	V	—	125	—	Me	3379.923	Zr I	10	2	—	—
3385.40	Cd II	—	[40]	—	Tk	3382.512	Ce	8	—	—	—	3379.835	Ir	4	2 h	—	—
3385.399	Sm II	6	4	—	—	3382.484	Mo	15	15	—	—	3379.825	Cr I, II	15	100	—	—
3385.346	Cd	8	—	—	—	3382.412	Eu	2 h	—	—	—	3379.803	Nd	12	4	—	—
3385.327	Cr	30	2	—	—	3382.409	Fe I	50	10	—	—	3379.78	Yb	12	20	—	—
3385.25	Hg II	—	[200]	—	Ps	3382.407	Sm II	100	40	—	—	3379.763	Gd	2	2	—	—
3385.246	Mo	5	2	—	—	3382.407	Cb	5	40 h	—	—	3379.762	Mo	1	25	—	—
3385.23	Kr II	—	[15 whl]	—	Me	3382.312	Ti I	30	7	—	—	3379.759	Pr	10	2	—	—
3385.23	Hf	—	3 h	—	—	3382.308	Ce	8	—	—	—	3379.719	Re I	80	—	—	—
3385.224	Co I	250 R	15	—	—	3382.304	U	3	1	—	—	3379.69	Cu I	3 h	—	—	—
3385.144	Ru	60	35	—	—	3382.292	Mo	10	6	—	—	3379.674	Th	4	3	—	—
3385.094	Ir I	5	—	—	Ab	3382.28	Bi	2	—	—	To	3379.672	U	2	3	—	—
3385.087	Er	25 d	15 d	—	—	3382.096	W	8	7	—	—	3379.62	W	—	5	—	—
3385.072	Ce	5	—	—	—	3382.093	Nd	4	—	—	—	3379.605	Ru I	60	18	—	Rt
3385.053	Ta	18	10	—	—	3382.08	Cr	30	1	—	—	3379.58	A	—	[10]	—	—
3385.05	Ho	10	10	—	Ex	3382.067	Er	15	1	—	—	3379.564	Cr I	12 h	—	—	Ed
3385.03	Tb	8	8	—	Ed	3382.00	Au II	6	8	—	—	3379.52	Tb	8	—	—	—

3379.5—3372.8 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3379.515	Ta	18 r	50 r	—	—	3377.307	Ce	2	—	—	—	3375.131	Os	3	5	—	—
3379.48	A II	—	[3 h]	—	Rt	3377.23	Ne II	—	—	[4]	—	3375.116	W	10	9	—	—
3379.409	Ir	3	—	—	—	3377.2	Rn	—	—	[30]	—	3375.03	Tb	30	15	—	Ed
3379.397	Sc II	4	10 hl	—	—	3377.20	Fe	5 wh	—	5 wh	—	3374.978	Th	3	3	—	—
3379.378	U	3	1	—	—	3377.20	O II	—	—	[40]	—	3374.953	Cu II	—	10	—	Sh
3379.371	Cr II	6	100	—	—	3377.146	Nd	6	4 h	—	—	3374.952	U	5	3 h	—	—
3379.37	V	6	3	—	—	3377.138	Rh	40	10	—	—	3374.94	Ga II	—	[4]	—	Sy
3379.300	Cb	1	100	—	—	3377.127	Ce	50	5 s	—	—	3374.936	Nd	10	2	—	—
3379.29	F II	—	[3]	—	Di	3377.126	Ir	4 h	—	—	—	3374.935	Cr	25	4	—	—
3379.277	W	4	1	—	—	3377.11	Dy	4	4	—	—	3374.925	Cb	20	20	—	—
3379.264	Ru I	30	2	—	—	3377.10	Tb	8	3	—	Ed	3374.903	Ru I	30	1	—	—
3379.263	Eu	3	2	—	—	3377.063	Co I	100	—	—	—	3374.89	La	2	3	—	Me
3379.216	Ti I	25	10	—	—	3377.04	Pr	8	1	—	—	3374.870	W II	6	12	—	—
3379.19	Nd	10	4	—	—	3377.00	Er	10	—	—	—	3374.86	I	—	[2]	—	Ke
3379.18	Sc II	3	3 h	—	—	3376.993	Ba I	15 r	6	—	—	3374.826	Ce	5	—	—	—
3379.172	Ce	30	2	—	—	3376.963	Ce	2	—	—	—	3374.768	Mo	2	20	—	—
3379.171	Cr I	40	6	—	—	3376.957	Os	15	10	—	—	3374.726	Zr II	20	30	—	—
3379.15	Tb	8	—	—	Ed	3376.934	Co I	2	—	—	—	3374.693	Gd	5	3	—	—
3379.135	Th	3	3	—	—	3376.924	U	8	—	—	—	3374.65	Sb	2 h	3	—	—
3379.046	Re	50	—	—	—	3376.903	W	7	6	—	—	3374.646	Ru I	80	18	—	—
3379.03	Kr II	—	[15 wh]	—	Me	3376.848	Th	2	3	—	—	3374.642	Ni I	15	6	—	—
3379.029	Ru	20	—	—	—	3376.835	Sm	5	2	—	—	3374.608	Ti I	3	—	—	—
3379.024	W II	4	15	—	—	3376.778	Cd	—	3	—	—	3374.60	Cr	25	2	—	—
3379.022	Fe I	80	50	—	—	3376.773	Mo	3	—	—	—	3374.581	Th	5	10	—	—
3379.0	Ca	—	[6]	—	Ba	3376.730	Cb	8	15	—	—	3374.51	Tm	60	30	—	Me
3378.93	Pr	4	1 h	—	—	3376.689	Mo	—	25	—	—	3374.499	Ce	2	—	—	—
3378.928	Hf	25 r	20	—	—	3376.681	Ce	4	—	—	—	3374.468	U	5	2	—	—
3378.899	Dy	2	2	—	—	3376.68	Hf II	6	2	—	—	3374.458	Fe	4	—	—	—
3378.86	Tb	15	8	—	Ed	3376.66	Tb	15	3	—	Ed	3374.453	Ir I	4	—	—	—
3378.815	Ce	5	—	—	—	3376.660	Pr	10	2	—	—	3374.44	I	—	[7]	—	Ke
3378.76	P	—	[50]	—	Gu	3376.644	In II	—	—	[5]	—	3374.41	Tb	15	8	—	Ed
3378.75	Er	7	—	—	—	3376.63	Dy	4	4	—	—	3374.352	Ti II	10	30	—	—
3378.744	Co	40	2	—	—	3376.62	Yb	4	—	—	—	3374.303	Co I	60	—	—	—
3378.730	W	3	2	—	—	3376.604	In II	—	—	[10]	—	3374.28	Dy	4	2	—	—
3378.685	Fe	150	80	—	—	3376.554	In II	—	—	[10]	—	3374.247	Cb	5	15	—	—
3378.683	U	2	—	—	—	3376.549	U	8	4	—	—	3374.226	Fe I	2	—	—	—
3378.679	Os	50	10	—	—	3376.50	Lu	100	10	—	Me	3374.221	Os	1	3	—	—
3378.579	Th	6	10	—	—	3376.50	Fe	5	1 h	—	—	3374.221	Ni I	400	6	—	—
3378.552	Sm	8	2	—	—	3376.494	Sm II	20	8	—	—	3374.170	Er	25	5	—	—
3378.524	W	8	7	—	—	3376.49	Nd	20	10	—	—	3374.16	Ho	6	8 h	—	Ex
3378.512	Cu II	—	2	—	Sh	3376.490	Ta	15 h	70	—	—	3374.157	Ce	10	1	—	—
3378.461	Mo	10	10	—	—	3376.46	A II	—	25	—	Rt	3374.151	U	4	2	—	—
3378.43	Dy	4	—	—	—	3376.397	Cr	30	20	—	—	3374.1	air	—	10	—	—
3378.360	Co I	30	2	—	—	3376.38	Dy	3	3	—	—	3374.10	Ne II	—	[4]	—	m
3378.337	Cr II	25	150	—	—	3376.36	Tb	8	3	—	Ed	3374.10	Te	—	[25]	—	B
3378.312	Sm II	5	2	—	—	3376.35	Sr II	—	4	—	Sd	3374.10	U	3 d	3 d	—	—
3378.302	Zr II	7	3	—	—	3376.335	Cb	3	2	—	—	3374.090	Cb	—	30 h	—	—
3378.28	Ne II	—	[18]	—	Bn	3376.332	Ce	2	—	—	—	3374.033	V I	15	10	—	—
3378.209	Sc II	4	6 hl	—	—	3376.331	Ni	25	—	—	—	3374.00	I	—	[5]	—	Bl
3378.202	U	15	1	—	—	3376.329	La II	100	50	—	—	3373.982	Ce	4	—	—	—
3378.20	Dy	2 d	2 d	—	—	3376.268	Zr II	10	8	—	—	3373.978	Ru I	60	4	—	—
3378.198	Mo	10	10	—	—	3376.206	Co I	18	3	—	—	3373.973	Ni II	—	4	—	—
3378.188	Ce	5	—	—	—	3376.15	Cr	25 h	—	—	Kn	3373.973	Co I	60	—	—	—
3378.177	Ta	—	3	—	—	3376.144	W II	9	40	—	—	3373.972	Ce	—	[2 h]	—	Hu
3378.127	Ce	5	—	—	—	3376.09	Er	12	1	—	—	3373.92	Xe	—	1	—	—
3378.11	W	—	7	—	—	3376.057	V I	80	60	—	—	3373.875	Fe	3	—	—	—
3378.020	Ru	60	12	—	—	3376.053	Ru I	5	—	—	—	3373.811	Mo	6	6	—	—
3377.949	Ir I	4	—	—	—	3376.053	Ta	35	15	—	—	3373.788	Sm	15	4	—	—
3377.91	Tm	6	10	—	Me	3376.040	U	6	—	—	—	3373.754	W	10	10	—	—
3377.89	I	—	[10]	—	Bl	3376.02	Tb	8	—	—	Ed	3373.729	Ce II	25	3	—	—
3377.86	Nd	4 d	2 d	—	—	3376.01	Dy	4	2	—	—	3373.727	U	10	1	—	—
3377.846	Ce	5	—	—	—	3376.003	Ce	2	—	—	—	3373.67	Er	5	1	—	—
3377.820	Sm II	8	2	—	—	3375.998	Ir I	3	—	—	—	3373.60	K	—	[30]	—	Bn
3377.771	Ce	8	—	—	—	3375.98	Kr II	—	—	[3 h]	—	3373.594	Cu II	—	8	—	Sh
3377.769	Ta	2 h	1 h	—	—	3375.78	U	12	10	—	Me	3373.581	Ti I	4	—	—	—
3377.741	Re	25	—	—	—	3375.780	U	12	10	—	—	3373.54	Tb	8	—	—	Ed
3377.739	Cb	2	2	—	—	3375.775	Ce	20	2	—	—	3373.499	Th	2	1	—	—
3377.711	Yt I	3	—	—	—	3375.75	Dy	5	4	—	—	3373.49	F II	—	[15]	—	Di
3377.708	Rh I	25	5	—	—	3375.706	Ti I	15 h	—	—	—	3373.481	A I	—	[300]	—	IHu
3377.706	Cu II	—	3	—	Sh	3375.672	Cu I	25	5	—	—	3373.455	Ce	25	3 h	—	—
3377.703	Eu	10	2	—	—	3375.650	Ne I	—	[50]	—	IHu	3373.417	Zr II	12	10	—	—
3377.625	V I	60	30	—	—	3375.648	Mo	20	10	—	—	3373.300	Nd	8	—	—	—
3377.593	Os	6	5	—	—	3375.634	Nd	12	6 h	—	—	3373.233	W	7	6	—	—
3377.585	Ti I	20	15	—	—	3375.63	Cr	6	—	—	—	3373.230	Co I	60	—	—	—
3377.52	P II	—	[50 h]	—	Gu	3375.630	Pr	8	2	—	—	3373.228	Eu	3	2	—	—
3377.485	Ti I	15	10	—	—	3375.588	Ce	5	—	—	—	3373.204	Os	6	—	—	—
3377.455	Zr II	25	10	—	—	3375.561	Ni I	4	—	—	—	3373.19	S	—	[5]	—	Hn
3377.449	Pr	9	1	—	—	3375.510	Ce	5	—	—	—	3373.126	Mo	5	25	—	—
3377.44	F II	—	[10]	—	Di	3375.48	U	8 d	—	—	—	3373.095	Nd	4	—	—	—
3377.43	Th	—	20 h	—	Ex	3375.48	Yb	30	100	—	—	3373.038	Os	15	5	—	—
3377.394	V I	35	15	—	—	3375.30	Ga	—	12	—	—	3373.001	Pd I	800 r	500 wh	—	—
3377.392	U	4	6	—	—	3375.245	Ru	12	—	—	—	3372.996	Pt	10	—	—	—
3377.39	Ba I	2	—	—	Sd	3375.244	Nd	10	4	—	—	3372.920	Mo	5	1	—	—
3377.374	Cb	—	20 w	—	—	3375.222	Mo	20	20	—	—	3372.88	A I	—	[3]	—	Ms
3377.35	Pd	—	—	—	Bx	3375.16	Xe II	—	—	[3 h]	—	3372.861	Fe	2	—	—	—
3377.3						3375.135	Ce	10	—	—	Hu	3372.800	Ti II	80	400 R	—	—

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3372.797	Pr	10	4	-	-	3370.586	Sm II	9	3	-	-	3368.375	Ce	10	-	-	-
3372.794	Th	3 d	4 d	-	-	3370.52	Eu	3 d	3 d	-	-	3368.375	Rh I	300	50	-	-
3372.791	Pt	2	-	-	-	3370.520	Mo	2	25	-	-	3368.36	La I	5	-	-	-
3372.79	Ho	12	15	-	Ex	3370.519	W	9	8 a	-	-	3368.33	Tm	10	30	Me	-
3372.77	Yt	15	3	-	-	3370.5	C	-	[20]	Jn	-	3368.31	U	2 d	2 d	-	-
3372.750	Er	35	20	-	-	3370.454	Cu	-	15	-	-	3368.168	Fe	5	1	-	-
3372.72	Tb	50	-	-	Ed	3370.45	U	2	2 h	-	-	3368.120	Ce	5	-	-	-
3372.7	Rn	-	[18]	-	Pe	3370.439	Ti I	80	15	-	-	3368.116	Dy	60	5	-	-
3372.70	P II	-	[50]	-	Gu	3370.396	Ce	8	-	-	-	3368.09	S	-	[25]	Hn	-
3372.696	Th	1 d	2 d	-	-	3370.39	Th	2 d	2 d	-	-	3368.07	Er	18	5	m	-
3372.68	Ca	1	3	-	Ad	3370.326	Co I	80	2	-	-	3368.06	Ho	-	4	Ex	-
3372.668	V	-	6	-	Me	3370.30	Pr	10 d	5 d	-	-	3368.054	Cr II	35	125	-	-
3372.648	Ce	3	-	-	-	3370.24	W II	5	10 a	-	-	3367.973	W	-	8 wh	-	-
3372.61	Rb	-	[30]	-	Ok	3370.231	Cr	30	1 h	-	-	3367.969	Mo	2	100	-	-
3372.600	U	4	1	-	-	3370.202	Os	50	10	-	-	3367.896	U	6	2	-	-
3372.562	Cb	10 h	200	-	-	3370.158	Cb	-	80	-	-	3367.892	Ni I	80	-	-	-
3372.539	Ce	8	-	-	-	3370.145	Ru	5	-	-	-	3367.881	Ti I	2 l	1	-	-
3372.526	Rh I	10	-	-	-	3370.14	Tb	15	3	Ed	-	3367.823	Th	8	12	-	-
3372.524	Os	3	2	-	-	3370.134	U	6	4	-	-	3367.820	Zr II	12	8	-	-
3372.510	Pr	20	3	-	-	3370.054	Ru	3	10	-	-	3367.81	Ca	1 h	5 r	Ad	-
3372.505	Ag II	1	3 h	-	-	3370.045	Ce	12	-	-	-	3367.778	Ce	5 w	-	-	-
3372.48	S	-	[3]	-	Hn	3369.994	Ce	3	-	-	-	3367.687	Re	5	-	-	-
3372.391	Ce	3	-	-	-	3369.964	U	6	1 h	-	-	3367.670	V	-	5	Me	-
3372.36	Tb	15	15	-	Ed	3369.939	Mo	5	20	-	-	3367.66	Tb	8	8	Ed	-
3372.351	Fe	1	-	-	-	3369.908	Ne I	-	[700]	IHu	-	3367.650	W	4	4	-	-
3372.254	Rh I	300	200	-	-	3369.844	Ta	3	1	-	-	3367.634	Eu	20	-	-	-
3372.208	Ti II	10	15	-	-	3369.831	Cb	10	3	-	-	3367.630	Mo	5	-	-	-
3372.193	W	-	12	-	-	3369.821	W II	1	4	-	-	3367.624	Be I	25	-	-	-
3372.151	Sc II	7	150	-	-	3369.809	Ne I	-	[500]	IHu	-	3367.60	U	8 d	1 d	-	-
3372.13	Cr	-	30	-	-	3369.749	Ce	2	-	-	-	3367.550	W	5	4	-	-
3372.090	Cb	5	3	-	-	3369.690	W	5	4	-	-	3367.53	Dy	4	2	-	-
3372.083	Os	40	8	-	-	3369.679	Rh I	25	5	-	-	3367.53	Cr I	50 wh	-	-	-
3372.080	Fe I	40	7	-	-	3369.673	Ag	-	5 h	-	-	3367.53	Pr	-	10 d	-	-
3372.065	Mo	5	2	-	-	3369.672	Ce	2	-	-	-	3367.525	Ce	5	-	-	-
3372.01	U	8	4	-	-	3369.669	Ru	30	2	-	-	3367.489	Re I	15	-	-	-
3372.00	Ca	2	-	-	Cw	3369.64	Dy	2	2	-	-	3367.400	Mo	5	1	-	-
3371.993	Ni I	400	10	-	-	3369.64	Tm	10	20	Me	-	3367.376	Cb	5	3	-	-
3371.90	S	-	[20]	-	Hn	3369.620	Er	12	1	-	-	3367.316	Ce	8	-	-	-
3371.87	Ne II	-	[12]	-	Bn	3369.616	Gd	2	2	-	-	3367.3	air	-	15 wh	m	-
3371.860	Ru I	70	18	-	-	3369.58	Nd	4 d	2 d	-	-	3367.275	Sm II	10	5	-	-
3371.85	O II	-	[5 h]	-	Fl	3369.573	Ni I	500 R	100	-	-	3367.24	I I	-	[2]	Db	-
3371.845	Ce	8	-	-	-	3369.549	Fe	300	200	-	-	3367.213	W	6	5	-	-
3371.800	Th	4	10	-	-	3369.452	Sm II	10	5	-	-	3367.20	Ne II	-	[25]	Bn	-
3371.76	Dy	8 d	5 d	-	-	3369.43	Tb	8	-	Ed	-	3367.18	Tb	15	3	Ed	-
3371.698	Eu	4	2	-	-	3369.387	Ce	10	-	-	-	3367.162	Mo	5	1	-	-
3371.692	Mo	-	25	-	-	3369.349	Fe	2	-	-	-	3367.161	Fe	10	3	-	-
3371.670	Pd	-	2 h	-	-	3369.282	Ru	12	60	-	-	3367.16	Pr	2	1	-	-
3371.539	Ta	70	20	-	-	3369.280	Ta	18	5	-	-	3367.158	Ce	2	-	-	-
3371.516	Os	3	3	-	-	3369.27	Dy	2	2	-	-	3367.121	Th	2	1 h	-	-
3371.50	Tb	15	8	-	Ed	3369.262	Zr II	7	5	-	-	3367.109	Co I	300 R	30	-	-
3371.454	Ti I	100	15	-	-	3369.253	Mo	20	15	-	-	3367.09	Hf II	2	3	Me	-
3371.441	Ir I	20	2	-	-	3369.242	Nd	6	-	-	-	3367.085	Cb	2	2	-	-
3371.43	Cr	-	2 h	-	-	3369.212	Ti II	6	25	-	-	3367.06	I	-	[5]	Bl	-
3371.412	Cu II	-	4	-	Sh	3369.157	Cb	5	50	-	-	3367.050	Ir I	3	-	-	-
3371.354	W	10	9	-	-	3369.15	Ti II	-	[40]	El	-	3366.998	Pt I	25	5	-	-
3371.329	Cb	10	15	-	-	3369.147	Fe	2	-	-	-	3366.960	Fe II	2	4	Do	-
3371.292	U	8	15	-	-	3369.125	Pr	3	-	-	-	3366.956	Cb	20	20	-	-
3371.212	Sm II	10	8	-	-	3369.102	Ce	8	-	-	-	3366.93	Sb	3	8 h	-	-
3371.172	Ce	25	3	-	-	3369.101	Th	1	2	-	-	3366.91	Mo	-	15	-	-
3371.114	V I	30	20	-	-	3369.075	Cb	15	-	-	-	3366.904	Ir I	4	1 h	-	-
3371.10	P	-	[70]	-	Gu	3369.054	Ti I	2	-	-	-	3366.880	V I	20	8	-	-
3371.063	Ce	8	-	-	-	3369.052	Eu	40	5	-	-	3366.878	Re I	3	-	-	-
3371.046	W	7	6	-	-	3369.050	Nd	10	8	-	-	3366.867	Fe I	50	15	-	-
3371.019	Sm II	3	2	-	-	3369.044	Ce	5	-	-	-	3366.807	Ni I	60	1	-	-
3371.015	Co I	2	-	-	-	3369.041	Sm	8	3	-	-	3366.789	Fe	50	25	-	-
3371.00	Sr	2	6	-	-	3368.96	U	5 d	-	-	-	3366.72	Xe II	-	[150 h]	Hu	-
3370.97	A	-	[10]	-	Rt	3368.957	Pr	5	1	-	-	3366.72	W	-	15	-	-
3370.95	Co II	1 d	2 d	-	Me	3368.953	Er	10	1	-	-	3366.69	Er	15	1	-	-
3370.94	U	-	50	-	-	3368.946	Sc II	50	20	-	-	3366.68	Hf	15	1	-	-
3370.910	Cd	-	2	-	-	3368.937	Ce	5	-	-	-	3366.675	Ce	2	-	-	-
3370.894	Re	6	-	-	-	3368.876	Nd	6	2	-	-	3366.661	Ta	50	15 w	-	-
3370.863	Ce	6	-	-	-	3368.804	U	6	6	-	-	3366.59	A	-	[5]	Rt	-
3370.86	Dy	7	4	-	-	3368.794	Ce	12	1	-	-	3366.581	U	2	-	-	-
3370.86	Ho	6	8	-	Ex	3368.775	Rh I	15	-	-	-	3366.560	Cu II	-	2	Sh	-
3370.788	Th	4	1	-	-	3368.690	Ce II	20	2	-	-	3366.554	Ce II	30	3	-	-
3370.786	Fe	300	200	-	S	3368.636	Zr I	7	-	-	-	3366.526	Th	5	6	-	-
3370.7	Rn	-	[2]	-	Pe	3368.619	Re	2 h	-	-	-	3366.476	Ir	3	-	-	-
3370.696	W	5	4	-	-	3368.572	Sm II	12	6	-	-	3366.370	U	1	2	-	-
3370.69	Hf II	3	3 h	-	-	3368.570	Co I	8	-	-	-	3366.333	Sr I	100	10	ISn	-
3370.64	In	-	3	-	Sq	3368.555	Cs II	-	[30]	Sv	-	3366.269	Cu II	-	2 h	Sh	-
3370.633	Ir	8	2 h	-	-	3368.55	Tb	8	-	Ed	-	3366.231	Ir I	4	-	-	-
3370.611	Cb	3	30	-	-	3368.481	Ir I	25	20	-	-	3366.212	Mn	5 w	5 w	-	-
3370.592	Zr I	9	-	-	-	3368.451	Ru I	100	60	-	-	3366.184	Re I	15 w	-	-	-
3370.59	Er	15 l	3	-	-	3368.442	Ta	1	18	-	-	3366.176	Ti I, II	20	50	-	-
3370.588	Os I	300 R	30	-	-	3368.432	Cb	4 h	8 h	-	-	3366.168	Ni I	400 W	12	-	-

3366.1—3359.2 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
3366.13	Eu	2 d	2 d	3363.725	W II	4 d	12	3361.508	V	—	200
3366.115	Mo	—	20	3363.65	Yb	10	—	3361.49	Rb	—	[10]
3365.96	Yb	4	30	3363.613	Ni I	20	—	3361.435	Sm	10	2
3365.958	Sm	4	2	3363.612	Ti I	2	—	3361.373	Mo	30	30
3365.944	Cb	1	30	3363.545	V I	25	8	3361.270	Sc II	25	9
3365.936	W	8 s	7 s	3363.537	Ce	8	—	3361.267	Co I	18	—
3365.931	Pr	10	2	3363.501	Sc II	2	2	3361.263	Ti I	80 r	50 r
3365.876	Cb	2	10	3363.47	A I	—	[20]	3361.241	Ni I	10	—
3365.872	Os	15	10	3363.43	U	12 rd	3 hd	3361.24	Tb	3	8
3365.865	Sm	25	10	3363.41	Ho	—	4	3361.232	Ce	8	5
3365.848	U	10	—	3363.369	Ce	2	—	3361.214	Eu	20	2
3365.840	Re	20	—	3363.351	Eu	4	2	3361.213	Ti II	100	600 R
3365.837	Ce	15	2	3363.338	W	10	9	3361.213	U	2	—
3365.8	air	—	10	3363.29	U	6 d	1 d	3361.21	Au	3	4
3365.80	Hf	2	2 wh	3363.274	Co I	30	2	3361.209	Bi	3	2
3365.80	Dy	10	5	3363.249	Pr	5	2	3361.149	Os	80	20
3365.766	Ni I	400 w	12	3363.207	Ce	2	—	3361.148	Ru	30	—
3365.740	Re	20	—	3363.112	Th	4	5	3361.142	Re I	25	—
3365.708	Ce	5	—	3363.068	Zr I	2 h	—	3361.107	W II	10	15
3365.707	Nd	20	15	3363.032	Re	20	—	3361.093	Co I	5	—
3365.65	Cu II	—	8	3363.031	U	3	—	3361.09	C II	—	12
3365.633	Th	1	2	3363.001	Mo	1	30	3361.04	Tm	10	15
3365.584	Cb	5	50	3362.930	Ce	3	—	3361.02	Er	12	1
3365.553	V I	125	80	3362.926	Os	5	5	3360.993	Ce	3	—
3365.54	A II	—	[5]	3362.89	Ne II	—	[4]	3360.990	Ti I	10	1
3365.524	Ir I	5	—	3362.860	Cb	3	2	3360.928	Fe I	7	1
3365.523	Cr	25	2	3362.83	Te	—	[50]	3360.902	Cb	3	50
3365.48	Ti II	—	[4]	3362.806	Ni I	100	—	3360.900	Pr	8	—
3365.476	Mo	5	4	3362.802	Co I	80	—	3360.86	Ho	—	4 h
3365.399	Mo	5	2	3362.791	Ir	2	—	3360.85	In	—	6
3365.349	Cu I	70	30	3362.783	Eu	5	2	3360.803	Rh I	2	1
3365.366	Th	2	3	3362.771	U	4	2	3360.792	Ru	4	—
3365.329	Ce	8	—	3362.748	Re I	40	—	3360.741	W	4	2
3365.303	Mo	—	5	3362.725	Mo	8	1	3360.716	Gd	25	25
3365.3	Rn	—	[2]	3362.711	Cr I	40	—	3360.714	Ce	5	—
3365.29	Tb	15	3	3362.684	Zr II	6	5	3360.65	Dy	2	2
3365.17	Te	—	[15]	3362.672	Th	3	4	3360.640	Sm	2	1
3365.130	U	5	—	3362.653	Ti II	2	5	3360.63	Ne II	—	[18]
3365.10	Eu	2 d	—	3362.619	W II	—	2	3360.541	Ce	35	4
3365.031	Ta	3	1	3362.61	Tm	250	200	3360.49	P	—	[30]
3365.014	Co I	8	—	3362.559	Os	2	5	3360.455	Zr I	20	—
3364.950	Nd	10	6	3362.533	Th	3	4	3360.405	Ce	2	—
3364.93	Tb	30	15	3362.530	Ta	10 r	1	3360.381	Th	4	5
3364.92	Pr	15 d	4 d	3362.43	Yb	15	—	3360.366	Ce	2	—
3364.900	La I	4	2 h	3362.4	Rn	—	[5]	3360.337	U	5	1
3364.825	Ru	3	—	3362.366	Mo	25	25	3360.325	W	4	12 l
3364.821	Ce II	15	4	3362.335	Ru	50	5 h	3360.313	Ir	3	—
3364.795	Sm	3	2	3362.28	Ca I	2	1 h	3360.313	Fe	3	100
3364.786	Yt I	3	2	3362.279	Fe	6	—	3360.295	Cr II	50	200
3364.747	Sm	2	—	3362.262	Nd	12	8	3360.291	Ce	3	—
3364.698	Th	4	5	3362.244	Gd	150	180	3360.29	Tb	8	3
3364.691	Cr	—	2	3362.213	Cr I	80	8	3360.28	Mo	—	25
3364.64	U	6	2	3362.196	Th	3	4	3360.162	Pr	4	1
3364.623	Ce	12	4	3362.184	Rh I	100	20	3360.161	Th	2	3
3364.591	Ni I	15	—	3362.172	Cb	—	100	3360.13	Cr	20	—
3364.561	W	—	9	3362.17	Dy	3	2	3360.103	Fe II	4	5
3364.52	Cs	—	[4]	3362.131	Ca I	15	5	3360.09	B	2	20
3364.43	P	—	[100]	3362.100	Ti I	6	3	3360.08	U	10	5
3364.43	Er	5	—	3362.050	U	2	1	3360.066	Ir	2 h	—
3364.40	Fe	2	—	3362.040	La I	10	3	3360.06	Ca	—	4
3364.37	Nd	8	2	3362.003	Ru I	60	8	3360.055	Hf	8	1
3364.362	Os	10	8	3362.00	Yt II	12	25	3359.955	Zr II	12	12
3364.345	Ce	18	1	3361.971	W	4	3	3359.895	Rh I	100	50
3364.278	Fe	7	1	3361.952	Fe	6	1	3359.86	Tb	8	3
3364.26	Ho	—	10	3361.935	Sc II	25	9	3359.815	Fe	10	2
3364.255	Co I	30	2	3361.918	Ca I	125	10	3359.814	Re I	25 W	—
3364.249	Gd	3	1	3361.853	Ce II	8	—	3359.767	Nd	8	1
3364.24	Tb	15	3	3361.852	W	6	3	3359.752	Th	1	3
3364.231	Ir	5	2 h	3361.835	Ti I	12	1	3359.743	Os	8	10
3364.122	Os	100	12	3361.833	Re	4	—	3359.738	Ir	5	6
3364.102	Ta	2	1	3361.773	Nd	8	2	3359.679	Sc II	50	25
3364.099	Ru	30	5	3361.770	Cr II	10	100	3359.62	U	10	1
3364.09	Er	25	7	3361.762	Ce	25	1	3359.56	Lu	150	15
3364.05	Ti II	—	[6]	3361.75	C II	—	6	3359.538	Mo	3	2
3364.019	Ce	10	—	3361.74	Kr I	—	[2]	3359.491	Fe I	15	3
3363.945	Pr	6	—	3361.739	Th	4 d	4 d	3359.49	Ho	—	4
3363.921	U	5	1 h	3361.73	A II	—	[5]	3359.49	Pr	—	4 h
3363.908	Sm	10	3	3361.727	U	15	8	3359.48	A I	—	[10]
3363.820	Zr II	12	9	3361.67	Er	6	1	3359.478	Dy	12	5
3363.811	Fe	6	1	3361.640	Ta	125 W	50 W	3359.474	Ir I	8	4
3363.783	Mo	40	30	3361.615	Eu	2 h	3	3359.445	Ce	8	—
3363.760	Co I	80 r	—	3361.58	Pb I	—	15	3359.34	Ca	—	4
3363.745	Cb	10	4	3361.558	Co I	80	2	3359.305	Ce	10	—
3363.737	Th	2 d	5	3361.556	Ni I	500 W	20	3359.30	Tb	8	3
3363.73	Cr II	8	35	3361.555	Ce II	10	—	3359.286	Ir	2	—

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3359.286	Co I	100	2	-	-	3357.049	Th	4	3	-	-	3354.86	Sb	-	-	2 h	-
3359.269	Pr	8	2	-	-	3357.043	Cb	10	10	-	-	3354.86	Tm	30	50	4	Me
3359.236	W II	-	6	-	-	3356.97	Yb	3	20	-	-	3354.81	Yt I	6	-	-	Me
3359.205	Re I	40	-	-	-	3356.894	Ba I	40 r	3	Sz	-	3354.760	Mo	8	-	-	-
3359.200	Mo	4	5	-	-	3356.89	Te	-	[5]	Bl	-	3354.758	Ce	2	-	-	-
3359.18	Cr	25	-	-	-	3356.838	Co I	25	-	-	-	3354.752	U	8	-	-	-
3359.106	Ni I	60	-	-	-	3356.829	Th	5	5	-	-	3354.741	Cb	20	15	-	-
3359.095	Ru I	70	20	-	-	3356.825	Re	4	-	-	-	3354.726	Ir	2	-	-	-
3359.085	Co I	35	-	-	Dn	3356.80	Tm	6	10	-	Me	3354.719	Sm	10	5	-	-
3359.070	Th	1	3	-	-	3356.78	Hf	10	-	-	Me	3354.707	Rh I	10	2	-	-
3358.981	Ta	7	1	-	-	3356.765	Ce	8	-	-	-	3354.635	Ti I	100	20	-	-
3358.96	Yt I	2	2 h	-	m	3356.72	Cr	35 wh	-	-	-	3354.621	Nd	10	2	-	-
3358.96	Dy	2	2	-	-	3356.715	W	7	6	-	-	3354.618	Th	5	6	-	-
3358.909	Fe	5	-	-	-	3356.693	Fe	15	1	-	-	3354.589	Yt I	10	4	-	-
3358.906	Hf	25	2	-	-	3356.644	Ta	15	5 h	-	-	3354.58	Er	10	-	-	-
3358.895	Ir	2	-	-	-	3356.59	Tb	8	-	-	Ed	3354.57	Ho	6	8	-	Ex
3358.868	U	3	2	-	-	3356.554	Nd	10	2	-	-	3354.550	He I	-	[10]	-	Ps
3358.8	Cs	-	[4]	-	Bs	3356.534	Ir	2	-	-	-	3354.520	Ce II	10	-	-	-
3358.78	Hg	-	[18]	-	Ps	3356.51	K II	-	[5]	-	Bn	3354.502	U	12	8	-	-
3358.74	In	-	6	-	Sq	3356.5	Rn	-	[40]	-	Pe	3354.488	Mo	10	-	-	-
3358.72	Nd	20	10	-	-	3356.472	Co I	150 W	2	-	-	3354.474	Cu I	30	10 h	-	-
3358.65	Tb	15	8	-	Ed	3356.46	Cb	10 w	3	-	-	3354.451	W	10	10	-	-
3358.628	Gd	100	100	-	-	3356.461	Ru I	10	-	-	-	3354.386	Zr II	10	10	-	-
3358.61	Dy	15	2	-	-	3356.461	Re I	18	-	-	-	3354.377	Co I	200 R	-	-	-
3358.606	Th	10	12	-	-	3356.453	Mo	3	10	-	-	3354.375	Eu	12	-	-	-
3358.604	W II	10	40	-	-	3356.41	S	-	[15]	-	Hn	3354.37	U	6 d	-	-	-
3358.60	Co II	-	20	-	-	3356.410	Ce	25	2	-	-	3354.34	F	-	[3]	-	Di
3358.568	Re I	10	-	-	-	3356.402	Fe I	35	8	-	-	3354.281	Sm	5	2	-	-
3358.56	A	-	[3]	-	Rt	3356.400	Cr	35 wh	-	-	-	3354.213	Co	30	-	-	-
3358.527	Ta	70	25 W	-	-	3356.396	U	8	-	-	-	3354.185	Th	5	8	-	-
3358.501	Cr II	40	200	-	-	3356.352	V I	125	60	-	-	3354.182	Sm II	10	5	-	-
3358.501	Pr	10	2	-	-	3356.35	Ne II	-	[4]	-	Bn	3354.16	Tb	15	-	-	Ed
3358.494	Ce	8	-	-	-	3356.328	Re	20	-	-	-	3354.14	Ca	1	2	-	Ad
3358.479	Ti I	15	1	-	-	3356.266	Fe II	10	2	-	-	3354.124	Mo	10	-	-	-
3358.44	Au	5	-	-	-	3356.220	Dy	10	5	-	-	3354.064	Fe	40	40	-	-
3358.426	Ce	8	-	-	-	3356.21	Er	18	2	-	-	3354.05	air	-	12	-	Sq
3358.417	Cb	100	100	-	-	3356.205	U	8	-	-	-	3353.98	Rb	-	[30]	-	Ok
3358.38	Tb	8	-	-	Ed	3356.199	Ru	30	3	-	-	3353.944	Ce	10	-	-	-
3358.34	Ca	-	2	-	-	3356.196	Ti I	10	1	-	-	3353.912	Os	40	15	-	-
3358.32	F	-	[10]	-	Di	3356.193	Ir I	4	-	-	-	3353.88	Cs	-	[4]	-	Bs
3358.310	W	-	7	-	-	3356.092	Hf II	15	5	-	-	3353.871	Ru	4	-	-	-
3358.303	Hf II	10	15	-	-	3356.091	Zr II	50	40	-	-	3353.775	V	2	100	-	-
3358.292	Ir	2	-	-	-	3356.074	Ce	8	-	-	-	3353.766	Sm	2	-	-	-
3358.277	Ti I	35	5	-	-	3356.030	Ta	3	-	-	-	3353.741	W	9	8	-	-
3358.273	Sm II	6	2 h	-	-	3355.98	F	-	[6]	-	Di	3353.74	Yb	5	8	-	-
3358.27	Dy	3	2	-	-	3355.944	Co I	10	-	-	-	3353.734	Sc II	50	60	-	-
3358.252	Fe II	3 h	7	-	Do	3355.93	Pd	-	[5]	-	Bx	3353.703	Eu	10	-	-	-
3358.158	Nd	6	2	-	-	3355.920	Nd	10	4	-	-	3353.687	Rh I	10	-	-	-
3358.15	Er	10	1	-	-	3355.912	Re	15 w	-	-	-	3353.687	Cb	5 h	2	-	-
3358.141	U	4	-	-	-	3355.89	U	3	2	-	-	3353.67	Se II	-	[20]	-	Bl
3358.124	Mo	60 W	30	-	-	3355.87	Yb	4	20	-	-	3353.656	Zr I	20	-	-	-
3358.12	Te	-	[10]	-	Bl	3355.845	Pr	10 W	2	-	-	3353.648	Ru	50	4	-	-
3358.032	Re	25	-	-	-	3355.793	Ir I	10	3	-	-	3353.63	Ne II	-	[4]	-	Bn
3358.007	Co I	15	-	-	-	3355.68	Nd	10	4	-	-	3353.61	Cr	30	-	-	-
3357.969	Os	100	15	-	-	3355.668	Pr	25	4	-	-	3353.599	U	2	1 h	-	-
3357.931	U	8	8	-	-	3355.663	Ru	20	-	-	-	3353.595	Dy	35	5	-	-
3357.920	Ce	8	-	-	-	3355.626	Re	10	-	-	-	3353.592	Nd	5	3	-	-
3357.90	Ho	6	8	-	Ex	3355.60	Dy	2	2	-	-	3353.57	Ho	6	8	-	Ex
3357.90	Ne II	-	[7]	-	Bn	3355.599	Ta	5	3 h	-	-	3353.555	W	8	7	-	-
3357.853	Ce	8	-	-	-	3355.585	Ir I	4	-	-	-	3353.544	Ir I	2	-	-	-
3357.849	Rh I	3	-	-	-	3355.541	Th	2	5	-	-	3353.521	Nd	10	6	-	-
3357.778	Mo	25	2	-	-	3355.525	I II	-	[10]	-	Ke	3353.503	Cb	10	20	-	-
3357.734	Ir	2	-	-	-	3355.487	Mn	3	-	-	-	3353.49	Pr	6	1	-	-
3357.726	Ce	8	-	-	-	3355.43	U	2	2	-	-	3353.45	Ho	6	-	-	m
3357.692	Pr	8	-	-	-	3355.419	Cb	5	5	-	-	3353.39	Nd	8	-	-	-
3357.687	Cs	-	[6]	-	Sv	3355.4	Ti	-	5	-	Cx	3353.39	Cl II	-	[125]	-	Ks
3357.68	Tb	8	-	-	Ed	3355.368	V	-	30	-	Me	3353.359	Cb	5 w	3 h	-	-
3357.61	Dy	2	2	-	-	3355.361	Ce	4	-	-	-	3353.330	Ce	10	30	-	-
3357.58	Kr II	-	[2]	-	Me	3355.36	Ca	1 h	2 h	-	Ad	3353.308	Ru I	30	15	-	-
3357.56	Fe	2	-	-	-	3355.30	Cd II	-	[3]	-	Tk	3353.267	Fe I	10	5	-	-
3357.528	Os	4	8	-	-	3355.290	Re	60 h	-	-	-	3353.211	Re I	40	-	-	-
3357.521	U	10	-	-	-	3355.245	Th	3	6	-	-	3353.150	Zr I	2	-	-	-
3357.49	La I	7	-	-	-	3355.229	Fe	100	100	-	I	3353.126	Cr	15	50	-	-
3357.41	Cr	6	125	-	-	3355.14	Au I	25	-	-	-	3353.026	Cr	20	30	-	-
3357.37	Tb	15	3	-	Ed	3355.118	Co I	10	-	-	-	3352.986	Ce II	10	2	-	-
3357.31	Dy	2	2	-	-	3355.112	U	8	4	-	-	3352.976	Ru I	6	-	-	-
3357.303	Sc	4	-	-	-	3355.1	Bi II	-	[35]	-	MI	3352.950	W	10	12	-	-
3357.30	Tm	6	10	-	Me	3355.07	Dy	4	4	-	-	3352.938	Ce	18	-	-	-
3357.264	Zr II	50	40	-	-	3355.05	Ne II	-	[40]	-	Bn	3352.937	Ti I	25	2	-	-
3357.232	Th	4	4	-	-	3355.026	Ir	4	4 h	-	-	3352.930	Fe I	5	3	-	-
3357.215	Ce	30	3	-	-	3355.021	Ce II	20 s	3	-	-	3352.89	Tb	30	8	-	Ed
3357.14	U	4	3	-	-	3354.989	Mo	5	-	-	-	3352.869	Cb	10	2 h	-	-
3357.106	Eu	2	2	-	-	3354.98	S	-	[8]	-	Bl	3352.844	Ir	-	2 h	-	-
3357.094	W	4	3	-	-	3354.978	W	-	5	-	-	3352.834	Cb	-	5 h	-	-
3357.078	Mo	-	30	-	-	3354.90	Pr	2	2	-	-	3352.80	Co II	-	30	-	Me

3352.7—3345.6 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
3352.771	W	4	12	3350.52	U	8	2 h	3347.863	Ir I	3	-
3352.724	Sm	4	-	3350.482	Gd	150	180	3347.86	Er	7	1
3352.696	Dy	20	5	3350.48	I	-	[5]	3347.837	Cr II	35	125
3352.679	Y	4	2	3350.46	Ho	6	8	3347.82	Dy	12	10
3352.63	Tb	8	-	3350.44	Xe	-	[4 whl]	3347.734	Er	9	1
3352.592	Eu	2 h	2	3350.43	Eu	30	-	3347.64	Er	5	2 h
3352.590	Cb	15	10	3350.42	Ni II	-	2	3347.613	Ru I	60	6
3352.49	Yb	20	-	3350.401	Mn	4	-	3347.586	Re	4 h	-
3352.435	Sn	-	100 h	3350.376	Co I	4 h	-	3347.576	Th	1	4
3352.392	W II	3	10	3350.36	Ca I	15	3	3347.574	Co I	7	-
3352.373	Rh I	5	-	3350.33	Th	2	2 d	3347.569	Nd	8	2
3352.33	In II	-	[10]	3350.299	Mo	5	6	3347.555	Cb	3	1
3352.284	Cb	5	5	3350.285	Fe I	8	4	3347.547	Ir I	7	1
3352.283	Ce II	25	1	3350.28	U	4 d	1 hd	3347.53	Yb	5	10
3352.221	Nd	8	2	3350.275	Pr	10	3	3347.508	Fe	2	1
3352.19	Pd	-	[3]	3350.255	Er	10	2	3347.50	Kr I	-	[2]
3352.11	Te	-	[35]	3350.251	Ru	10	-	3347.48	Cr	12	-
3352.11	Tm	6	6	3350.240	I	-	[15]	3347.472	Ce	8	-
3352.08	Ag	-	10 h	3350.209	Ca I	100	10	3347.441	W II	-	6
3352.08	Ho	6	6	3350.107	Ru	12	-	3347.44	Cs I	30	-
3352.071	Ti II	8	15	3350.099	Gd	3	3 h	3347.43	S	-	[8]
3352.055	Hf II	30	50	3350.063	Er	18	6	3347.296	Sm II	8	7
3352.05	Tb	8	3	3349.99	Tm	20	-	3347.27	Tb	15	8
3352.048	Se II	12	3	3349.967	Ce II	30	1	3347.27	Xe II	-	[3 wh]
3352.044	Cu II	-	4	3349.910	Re I	20	-	3347.269	Mo	1	30
3351.97	Sn II	-	[60]	3349.866	Th	-	2	3347.18	Nd	10 d	4 d
3351.967	W	7	4	3349.835	Sm	3	1	3347.063	Ta	2 h	-
3351.966	Cr I	50	50	3349.834	La I	4	-	3347.042	U	3	2
3351.932	Ru I	50	4	3349.793	I	-	[10]	3347.018	Mo	40	4
3351.89	La II	2	2	3349.738	Fe	1	-	3347.00	Rb	-	[60]
3351.875	Ta	2 wh	1 h	3349.538	W	4	7	3346.96	Br	-	[3]
3351.833	U	5	2	3349.526	Co	7	-	3346.96	Eu	2	2
3351.80	Nd	8 d	1 h	3349.523	Cb	30	5 h	3346.936	Fe I	30	15
3351.750	Ce	3	-	3349.463	Cu II	-	2 h	3346.935	Co I	100	2
3351.745	Fe	80	60	3349.445	Cs	-	[10]	3346.931	Cb	15	10
3351.744	Ne I	-	[25]	3349.43	U	4 d	3 d	3346.907	Sm	5	3
3351.735	Os	50	12	3349.42	Th	30	50	3346.819	Ir	2 h	-
3351.686	Sm	3	-	3349.406	Ti II	100	400 R	3346.77	Pd II	-	4 h
3351.67	Ti II	1	5	3349.405	Ce	4	5	3346.750	Cb	5	80
3351.662	Mn	8	-	3349.40	Au	15	5	3346.742	Cr	150 R	80 r
3351.66	U	4	2	3349.348	Cb	5	100	3346.733	U	2	2
3351.61	Hg	-	2	3349.340	W	2	10	3346.728	Ti II	60	60
3351.599	Th	4	4	3349.340	Th	5	10	3346.7	bh Ca	8	-
3351.596	Cr	35	8	3349.322	Cr	35	50	3346.685	Er	3	-
3351.556	Eu	12	2	3349.292	Cu I	70	40	3346.64	Dy	2	2
3351.536	Co I	35	2	3349.222	Co I	3 h	-	3346.629	Eu	4	2
3351.525	W	-	6	3349.22	Sc I	4	-	3346.608	Re	5	-
3351.521	Fe I	70	60	3349.193	Mo	6	5	3346.589	Nd	6	-
3351.520	Ce	12	-	3349.17	Hf II	5	4	3346.56	Se	-	[35]
3351.512	Mo	5	8	3349.072	Cr	125	40	3346.559	Th	4	3
3351.510	Ta	18 r	15 r	3349.059	Cb	80	100	3346.517	Ce II	15	2
3351.456	Al II	-	[10]	3349.036	U	4	-	3346.50	Yb	15	-
3351.427	Mn	4	-	3349.035	Ti II	125	800 R	3346.461	Ir I	2	-
3351.30	Hg	10	20 h	3348.961	Th	4	6	3346.403	Mo	2	50
3351.30	Er	10 w	2	3348.940	Mo	1	30	3346.400	U	2	1
3351.283	Sm	5	2	3348.88	Dy	2	-	3346.40	Eu	4 wd	-
3351.252	Pr	5	1	3348.871	Sm	3	1	3346.353	Sm II	5	3
3351.251	U	8	-	3348.844	Ti II	12	12	3346.350	Er	10	2
3351.246	Sr I	300	15	3348.784	Cb	1	30	3346.32	Tb	8	3
3351.230	Th	10	15	3348.775	Ce	6	-	3346.310	Co I	5	-
3351.228	Zr I	4	-	3348.766	Th	5	4	3346.286	Cb	-	40
3351.19	Eu	15 W	-	3348.74	Er	10	1	3346.199	Re I	100	-
3351.185	W	5	3	3348.72	Rb I	100	-	3346.198	U	3	1 h
3351.148	Co I	4	-	3348.72	Cs I	15	-	3346.167	Ce	4	-
3351.118	Mo	3	5	3348.705	Ru I	50	2	3346.142	Mo	-	20
3351.077	Ce II	3	-	3348.691	U	4	1	3346.14	Dy	3	-
3351.036	Eu	2	2	3348.682	Sm	10	10	3346.111	W	7	2
3350.961	Ta	25 W	18 W	3348.662	Os	30	15	3346.10	Eu	2	2
3350.95	Dy	2	2	3348.586	Nd	2	-	3346.085	Ir	2	-
3350.94	A II	-	[5]	3348.58	Ho	-	4 h	3346.062	In II	-	[10]
3350.935	Ce	3	-	3348.54	Tb	15	-	3346.06	Ho	-	4
3350.9	Rn	-	[5]	3348.535	Ti I	7	-	3346.03	Er	30	10
3350.897	U	3	2	3348.374	V	-	20	3346.018	Cr	35	35
3350.89	Rb I	150	-	3348.33	U	5 d	1	3345.991	Gd	20	15
3350.883	Sm	9	4	3348.293	W	2	15 l	3345.940	In II	-	[5]
3350.747	Ce	10	-	3348.284	Cb	1 h	50	3345.934	Zn I	150	50
3350.692	Cb	10	7 h	3348.190	Ce	8	-	3345.93	Te	-	[35]
3350.683	Ce	20	-	3348.161	Nd	10	2	3345.900	V	-	125
3350.68	Te	-	[5]	3348.140	Er	15	2	3345.890	U	12	1 h
3350.66	Dy	3	2	3348.113	Co I	80	-	3345.860	W II	10	15 l
3350.652	Sm	8	-	3348.075	Mo	6	1	3345.85	Tm	6	15
3350.614	V	4	10	3348.07	Tb	30	3	3345.79	Dy	3	2
3350.56	Ag I	2 h	-	3348.012	Ru	50	3	3345.73	Kr I	-	[4]
3350.549	Ru	12	-	3347.927	Fe I	150	100	3345.711	Nd	20	4
3350.548	Ti I	10	1	3347.89	Nd	8	6	3345.682	Fe	1	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3345.572	Mo	5	2	-	3343.492	Sm	15	8	-	3341.43	Cr	50	1	-
3345.572	Zn I	500	100	Hz	3343.48	Dy	3	-	-	3341.422	W	4	3	-
3345.54	U	12	4	-	3343.471	Ta	2	3	-	3341.344	Co	60	2	-
3345.522	Nd	10	2	-	3343.46	Sr	-	6	Sd	3341.293	Ce	10	-	-
3345.5	Rn	-	[2]	Pe	3343.44	U	3 d	1	-	3341.281	U	2	1	-
3345.49	Ne II	-	[7]	Bl	3343.43	Rh I	2	-	-	3341.277	I II	-	[5]	Ke
3345.46	Er	6	1	-	3343.43	Er	4 wh	1 h	-	3341.230	Ru	10	-	-
3345.451	Be I	2	-	-	3343.417	W II	6	12 l	-	3341.182	Cu I	5	-	-
3345.436	Ce	20	-	-	3343.38	Nd	6	2 h	-	3341.087	Ru	50	5	-
3345.37	Dy	3	2	-	3343.379	Ti I	2	-	-	3341.076	Eu	3 d	2 d	-
3345.37	Cr	18	1	-	3343.357	Ru	4	-	-	3341.010	Ce	6	-	-
3345.352	Mn	15	-	-	3343.342	Cr I	30	10	-	3340.994	U	2	1	-
3345.32	K	-	[30]	Bn	3343.315	V	-	10	Me	3340.986	Dy	3	-	-
3345.317	Ru	60	5	-	3343.28	Cb	-	15	-	3340.955	Pr	10	2	-
3345.311	Eu	3	2	-	3343.271	Th	4	5	-	3340.886	Ce II	18	-	-
3345.230	Ce	3	-	-	3343.27	Sc II	7	12 w	-	3340.767	U	2	1	-
3345.15	Cr	15	2	-	3343.248	W	8	2	-	3340.689	Os	2	3	-
3345.108	Ta	3	3 h	-	3343.242	Fe I	5	2	-	3340.65	Ca	-	3	Ad
3345.089	W	9	8	-	3343.233	Ce	3	-	-	3340.631	U	3	1	-
3345.088	Nd	12	2	-	3343.227	Cr	12	6	-	3340.605	Rb II	-	[60]	Rr
3345.02	Sm	1	3 h	-	3343.15	Cd II	-	15	Vs	3340.60	Dy	5	-	-
3345.020	Zn I	800	300	Hz	3343.15	Ca	-	3	-	3340.585	Sm II	40	25	-
3344.97	Xe II	-	[2 h]	Hu	3343.12	Er	3	-	-	3340.574	Ce	-	[10]	Sv
3344.931	Ti I	8	-	-	3343.102	W II	4	10	-	3340.566	Fe I	125	100	S
3344.904	W II	3	12	-	3343.06	Yb	6	40	-	3340.555	Zr II	25	20	-
3344.882	Th	8	8	-	3342.98	Tb	15	-	Ed	3340.508	Mo	1	25	-
3344.870	U	6	6	-	3342.93	Yb	30 w	8	-	3340.48	Er	3	2	-
3344.797	Ru	5	-	-	3342.904	Rh I	2	1	-	3340.464	Cb	2	20 d	-
3344.79	A	-	[3]	Rt	3342.900	Cb	2	-	-	3340.46	Ho	-	4 h	Ex
3344.786	Zr II	15	15	-	3342.896	Er	10	-	-	3340.42	Ca	-	2	Ad
3344.761	Ce II	50	8	-	3342.879	Ru	3	-	-	3340.387	Yt I	4	2	-
3344.758	Pr	2	-	-	3342.853	W	-	9	-	3340.36	Cl	-	[20]	Jv
3344.75	Er	8	1	-	3342.845	Ce	2	-	-	3340.351	Ir I	10	-	-
3344.746	Mo	50	40	-	3342.797	Ir I	2	-	-	3340.344	Ti II	80	100	-
3344.73	Rb	-	[15]	Ok	3342.74	S	-	[8]	Bl	3340.308	Re	2	-	-
3344.66	Ag	-	2 h	-	3342.734	Co I	150 W	-	-	3340.307	Ce	12	-	-
3344.630	Ti I	2	-	-	3342.71	Ho	-	4	Ex	3340.167	Mo	30	25	-
3344.564	Pr	8	1	-	3342.707	Ti I	10	5	-	3340.114	U	3	1	-
3344.561	U	4	-	-	3342.707	Ru	3	-	-	3340.096	W	5	2	-
3344.560	La II	300	200 wh	-	3342.68	U	10	10	-	3340.08	Pt	1	15	Sh
3344.552	Ce	4 w	-	-	3342.675	Eu	2 h	2	-	3340.07	Te	-	[25]	Bl
3344.55	Yt	3	2 h	-	3342.664	Sm	2	3	-	3340.02	Er	20	3	-
3344.532	Ru I	60	6	-	3342.65	Dy	5	2	-	3340.010	Dy	80	4	-
3344.513	Ca I	100	7	IWg	3342.59	Mo	-	20	-	3339.91	Ti II	-	[12]	Ei
3344.51	Cr	20	2	-	3342.586	Cr II	30	125	-	3339.910	Ta	15	70	-
3344.50	Tb	8	3	Ed	3342.564	Co I	4	-	-	3339.804	Cr II	25	150	-
3344.49	Dy	3	2	-	3342.561	I	-	[18]	Ke	3339.797	Ce	10	-	-
3344.46	Ho	4	6	Ex	3342.531	Ce II	8	-	-	3339.783	Co I	150 w	-	-
3344.445	W	8	7	-	3342.462	W II	10	30	-	3339.781	Ru	10	70	-
3344.43	Ne II	-	[18]	Bn	3342.4	Rn	-	[2]	Wo	3339.740	Nd	15	4	-
3344.36	Er	12	1	-	3342.312	Ce	3	-	-	3339.716	U	3	1	-
3344.349	Sm II	40	10	-	3342.292	Fe	20	20	-	3339.692	Fe	2	1	-
3344.347	Re I	150	-	-	3342.28	V	5	2	-	3339.692	Re	30	-	-
3344.34	Th	2	2	-	3342.278	Ca	-	2	-	3339.63	Tm	3	10	Me
3344.335	Ce	8	-	-	3342.263	Re I	200	-	-	3339.61	Tb	15	3	Ed
3344.32	U	4	1	-	3342.26	I	-	[5]	Bl	3339.582	Fe I	10	5	-
3344.245	Cb	-	10	-	3342.224	La I	80	5	-	3339.573	W	-	10 l	-
3344.245	Co I	4	-	-	3342.216	Fe I	40	40	-	3339.556	Th	-	20 h	-
3344.218	Ir I	10	1	-	3342.214	Th	-	2	-	3339.552	Ru	100	60	-
3344.198	Rh I	100	20	-	3342.195	Ce	3	-	-	3339.54	Ti I	2	-	-
3344.172	Sm	4	-	-	3342.151	Ti I	12	8	-	3339.51	Dy	25	4	-
3344.17	Er	4	-	-	3342.11	Er	7	1	-	3339.508	Ce II	12	-	-
3344.1	Rn	-	[2]	Pe	3342.021	Cr	6	3 h	-	3339.504	Ta	8	1 h	-
3344.076	U	2	1	-	3341.974	Co I	100 r	50	-	3339.446	U	5	1	-
3344.004	Cs	-	[10]	Sv	3341.947	Co I	25	-	-	3339.440	Nd	10	2	-
3343.965	Cb	3	15	-	3341.914	Os	10	10 s	-	3339.392	Ir I	15	2	-
3343.934	Pr	9	1	-	3341.905	Fe	100	80	-	3339.35	Mo	3 d	3 h	-
3343.900	Pt I	100	80	-	3341.892	Eu	5	2	-	3339.265	Cb	3	5 h	-
3343.861	Ce	50	6	-	3341.88	S	-	[8]	Hn	3339.22	Ag	2 h	2 h	-
3343.852	W	7	4	-	3341.88	Dy	30	-	-	3339.215	U	6	3	-
3343.815	Th	3	3	-	3341.875	Ti I, II	100	300 R	-	3339.195	Fe I	80	50	-
3343.813	Zr II	20	15	-	3341.868	Ce I, II	40	5	-	3339.158	Cb	10 w	5 w	Me
3343.770	Ti II	60	70	-	3341.846	Mo	8	5	-	3339.12	Er	4	1	-
3343.743	Cu II	-	10	Sh	3341.836	Er	18	3	-	3339.063	Nd	10	4	-
3343.74	Cr	30 h	-	-	3341.832	Sm	5	1	-	3339.050	Ni I	5	-	-
3343.731	Mn	30	-	-	3341.664	Ru	70	50	-	3339.024	W II	2	12	-
3343.722	Mo	10	5	-	3341.661	U	12	15	-	3339.00	Tb	50	8	Ed
3343.711	Zr I	8	-	-	3341.640	Ce	2	-	-	3338.865	Sm	6	-	-
3343.709	Cb	15	20	-	3341.61	Er	12	2	-	3338.813	Ti I	6	-	-
3343.70	Ho	10 w	2	-	3341.600	Cb	3	50	-	3338.80	Xe II	-	[5]	Hu
3343.676	Fe	2	1	-	3341.554	Ti I	2	-	-	3338.76	Ho	12	20	Ex
3343.644	Sm	25	5	-	3341.478	Hg I	100	100	Cn	3338.758	Ni I	3	-	-
3343.614	Th	5	10	-	3341.473	Pr	10	3	-	3338.742	Eu	15	5	-
3343.591	Ir I	2	-	-	3341.435	Sm II	5	2	-	3338.707	Ru	30	3	-
3343.56	Ho	20	20	Ex	3341.433	Dy	10	2	-	3338.64	Dy	4	-	-

3338.6—3331.6 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3338.640	Cu II	1 h	5	-	3338.32	U	3	1	-	3334.114	Sm	8	4	-
3338.636	Fe	70	25	-	3338.315	Cb	10	5	-	3334.058	Th	2 d	2 d	-
3338.620	W II	5	15	-	3338.26	In	-	3	Sq	3334.056	Zr	2	-	-
3338.575	In II	-	[18]	Ps	3338.254	Fe	40	30	-	3333.974	Cb	5	1	-
3338.545	Rh I	200	50	-	3338.25	Yt II	3	7	-	3333.945	Pr	7	2	-
3338.534	Ce	2	-	-	3338.20	A	-	[5]	Rt	3333.94	U	1 d	3	-
3338.519	Co I	5	-	-	3338.183	Gd	30	30	-	3333.93	Tb	30	3	Ed
3338.518	Fe II	-	1	-	3338.16	Th	5	5	-	3333.912	Ti I	4	-	-
3338.515	Sm	2	-	-	3338.150	Os I	200 R	50	-	3333.901	Ce	8	-	-
3338.51	Eu	4	3	-	3338.148	Ce	2	-	-	3333.849	Os	12	10	-
3338.487	Ta	-	2	-	3338.12	Ne II	-	[4]	Bn	3333.68	Ag	2 h	4 h	Fn
3338.486	In II	-	[10]	Ps	3338.12	Al	-	2	Gn	3333.660	Ce	20	-	-
3338.48	U	4 d	1	-	3338.120	Sm II	25	5	-	3333.654	Eu	3	4	-
3338.431	Mo	5	6	-	3338.09	Cl	-	[10]	Jv	3333.64	Cl II	-	[40]	Ks
3338.42	Hg II	-	[5]	Ps	3338.077	Mo	5	20	-	3333.632	Sm II	15	5	-
3338.415	In II	-	[5]	Ps	3338.073	Ce	2	-	-	3333.624	U	4	-	-
3338.408	Zr II	15	12	-	3338.056	Ir I	2	-	-	3333.61	Rb	-	[40]	Ok
3338.400	Th	8	8	-	3338.033	W	-	10	-	3333.606	Yt II	2	5	-
3338.374	Ir I	15	2	-	3338.93	U	2	1	-	3333.605	Cr	125	3 h	-
3338.243	W	-	10	-	3338.9	Rn	-	[5]	Pe	3333.565	V I	25	12 w	-
3338.180	Pt	2	-	-	3338.883	Ca	2	-	-	3333.556	Zr I	5	-	-
3338.174	Fe I	150	1	-	3338.835	Pt I	2	-	-	3333.54	Dy	3	2	-
3338.112	Mo	1	20	-	3338.83	Dy	4	2	-	3333.506	U	6	-	-
3338.03	Tb	30	15	Ed	3338.771	Nd	20	-	-	3333.49	Hf II	-	3 h	Me
3338.018	Er	12	1 h	-	3338.768	Fe	125	100	-	3333.48	Si	-	2	Sy
3337.929	U	4	4	-	3338.692	Ce	8	-	-	3333.450	Pr	8	1	-
3337.924	Zr II	2	2	-	3338.686	Ru I	70	12	-	3333.389	Th	4	4	-
3337.872	Ce	10	-	-	3338.668	Cb	-	30 w	-	3333.388	Co I	100	-	-
3337.869	Th	12	15	-	3338.63	U	2 d	2	-	3333.334	Mo	5	3	-
3337.853	Ti II	12	60	-	3338.62	Se	-	[8 h]	Bl	3333.311	Ce	5	-	-
3337.849	Yt I	2	2	-	3338.552	Ce	2	-	-	3333.27	Tm	5	15	Me
3337.846	V	2	150	Me	3338.514	Fe I	2	2	-	3333.261	W	-	12	-
3337.844	Cu I	70	50	-	3338.503	Mo	3	20	-	3333.258	U	2	6	-
3337.823	Ru I	60	8	-	3338.483	V	1 h	60	Me	3333.21	Tb	30	3	Ed
3337.82	Tm	5	15	Me	3338.43	Er	8	-	-	3333.190	Sb II	2	10 h	Sp
3337.799	Ta	100	18 s	-	3338.422	Cb	30	40	-	3333.16	Ho	-	4	Ex
3337.79	Er	20	3	-	3338.42	Tb	15	3	Ed	3333.129	Th	6	2	-
3337.79	U	12	10	-	3338.419	W II	-	7	-	3333.084	Ta	7 h	15 w	-
3337.682	W	10	8	-	3338.372	Re I	100	-	-	3333.07	Yb	20	60	-
3337.67	K II	-	[2]	Bn	3338.32	Er	6	1	-	3333.058	Nd	6 d	2 d	-
3337.67	Tb	15	-	Ed	3338.244	Cb	1 w	30 w	Me	3333.037	Ce	15	-	-
3337.666	Fe	125	100	I	3338.225	Yt I	3	-	-	3333.031	Ti I	5 w	-	-
3337.584	Eu	2	2	-	3338.219	U	2	1	-	3332.895	U	4	1	-
3337.505	W	5	3	-	3338.215	Cu	60	15	IBu	3332.881	Ce	10	-	-
3337.502	Ce	20	-	-	3338.195	Ti II	60	150	-	3332.879	Cr	30	10	-
3337.5	Cl II	-	[2]	Mu	3338.16	Kr II	-	[4 h]	Me	3332.814	Ta	35 w	15 w	-
3337.5	bh Sr	8	-	L	3338.11	Ho	-	4 h	Ex	3332.729	Hf	40	10	-
3337.498	Ta	35	1	-	3338.076	Mo	4	20	-	3332.71	Ho	-	4	Ex
3337.488	Th	3	1	-	3338.062	Th	8	8	-	3332.703	Er	25	2	-
3337.488	La II	800	300 wh	-	3338.06	Tm	10	20	Me	3332.703	Sm II	10	2	-
3337.393	U	3	3	-	3338.039	Sm	9	3	-	3332.697	Cb	5 w	8	-
3337.254	Re	5 d	-	-	3338.98	Nd	6 d	-	-	3332.643	Ru	60	5	-
3337.25	Er	15	3	-	3338.966	Mo	8	3	-	3332.64	Sb II	10	20	Dv
3337.22	Cr I	10	-	-	3338.925	Cr	10	6	-	3332.61	Lu	-	8 h	Me
3337.20	Co	12	12	Ex	3338.882	Ce II	4	-	-	3332.52	Mo	-	80	-
3337.172	Co I	60	2	-	3338.88	Er	5	1	-	3332.474	Ce	10	-	-
3337.17	Yb	25 l	30	-	3338.87	Ne II	-	[250]	Bn	3332.425	U	8	3	-
3337.16	Zn	-	[5]	Vs	3338.870	Ti I	2 h	-	-	3332.42	Cl II	-	[15]	Ks
3337.16	Th	6	5	-	3338.86	Dy	2	2	-	3332.411	Ta	50	3	-
3337.15	Sb	2	10 h	Sp	3338.830	Cb	1	5	-	3332.395	Th	5	5	-
3337.138	Os	2	3	-	3338.820	U	10	-	-	3332.204	Ce	5	-	-
3337.12	Dy	2	2	-	3338.778	W	-	10	-	3332.180	Ni	8	-	-
3337.036	U	10	-	-	3338.742	Ta	35 w	1 h	-	3332.174	Nd	30	4	-
3337.014	Ni I	6	-	-	3338.690	Cr	150 wh	-	-	3332.159	Cb	10	10	-
3336.998	Ti II	-	6	-	3338.679	Sm	2	1	-	3332.153	Mg I	100	25	-
3336.98	Cr	18	8	-	3338.616	Zr II	15	10	-	3332.15	Ba	1	9	-
3336.969	Ti I	4	-	-	3338.605	Th	10	15	-	3332.137	Gd	10	12	-
3336.846	W	6	5	-	3338.603	Ce	4	-	-	3332.112	Ti II	40	125	-
3336.83	Dy	2	2	-	3338.525	Cb	-	5	-	3332.07	Th	3	1	-
3336.819	V I	6	1	-	3338.48	Tb	15	3	Ed	3332.052	Ru	60	10	-
3336.77	Th	2	2	-	3338.471	Nd	15	6	-	3332.04	Dy	2	-	-
3336.76	Er	15	1	-	3338.455	Ce	20 s	3	-	3331.963	U	3	1	-
3336.742	Ce	10	-	-	3338.45	Dy	4	2	-	3331.92	air	-	12 wh	Sq
3336.685	U	10	6	-	3338.434	U	2	2	-	3331.91	Ho	4	6 h	Ex
3336.680	Mg I	125	60	-	3338.326	Eu	50	5	-	3331.889	Cb	5	3	-
3336.639	Ru	50	4	-	3338.279	Ce	10	-	-	3331.887	Hf	12	-	-
3336.571	Mo	2	-	-	3338.251	Zr II	25	20	-	3331.85	Ag	1	4 h	-
3336.571	W	8	9	-	3338.25	Tb	8	-	Ed	3331.793	Ce	10	-	-
3336.551	Ce	10	-	-	3338.247	U	1	2	-	3331.776	Fe	40	10	-
3336.507	Mo	25 d	25 d	-	3338.217	Fe I	150 h	100 h	-	3331.678	Co I	2	-	-
3336.47	Eu	15	4	Kn	3338.159	Ir I	40	3	-	3331.672	W	15 l	12	-
3336.372	Ce	20 s	-	-	3338.151	Os	15	10	-	3331.643	Pr	9	1	-
3336.358	Ta	5	-	-	3338.144	Eu	3	2	-	3331.62	Rb	-	[40]	Ok
3336.350	V I	10	3	Me	3338.14	Dy	12	2	-	3331.612	Fe I	125	70	-
3336.330	Cr II	18	80	-	3338.137	Co I	250 R	-	-	3331.609	U	5	1	-

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
		Arc	Spk., [Dis.] R			Arc	Spk., [Dis.] R			Arc	Spk., [Dis.] R
3331.59	Mo	—	6 d	3329.002	Ce	10	—	3326.590	Cr	40	18
3331.567	Nd	8	2	3328.991	Nd	6	—	3326.564	Co I	60	—
3331.558	Er	6	—	3328.939	Sm II	10	2	3326.54	Cb	—	3 h
3331.518	Fe I	30	—	3328.930	Ta	7	—	3326.531	Ir I	2	—
3331.487	Ta	5	15 w	3328.920	Ce	5	—	3326.517	Os	12	8
3331.413	Ce	3	—	3328.867	Fe	150	100	3326.47	Tb	15	—
3331.405	Mo	15	15	3328.79	N II	—	[15]	3326.468	Th	5	5
3331.388	Gd	100	80	3328.79	Dy	5	—	3326.42	Dy	5	4
3331.36	Tb	8	—	3328.747	U	8	—	3326.417	W	5	4
3331.32	N II	—	[10]	3328.714	Ni I	15	—	3326.414	Zr I	5	—
3331.303	U	6	2 h	3328.640	Eu	3	4	3326.403	Ir	2	—
3331.28	Dy	4	2	3328.563	Mo	1	20	3326.389	I	—	[3]
3331.245	Rh	40	10	3328.456	Ru I	12	—	3326.386	Os	15	10
3331.224	Ce II	10	—	3328.402	V I	7	1	3326.26	Nd	6	2
3331.17	Eu	2 h	4 h	3328.351	Cr II	20	40	3326.21	La II	3	3
3331.093	Rh I	50	10	3328.326	Ti I	2	—	3326.19	Tb	8	—
3331.078	Sm	2	—	3328.305	Ta	10	1 h	3326.19	Dy	20	10
3331.07	Sc II	5	4 hl	3328.270	Nd	15	6	3326.190	W	15	12
3331.05	Er	4	1	3328.270	U	2	2	3326.185	U	12	—
3331.01	Ho	—	4 h	3328.25	Th	4	4	3326.109	Mo	5	4
3331.007	Ta	18	200 w	3328.213	Hf II	20	15	3326.100	Ir I	2	—
3330.90	Mo	—	20	3328.209	Co I	40	—	3326.077	Ca	10	—
3330.880	Yt II	4	30	3328.175	Re	3	—	3326.00	W	—	9
3330.804	Nd	4	—	3328.157	Cb	3	3	3325.976	Eu	20	2
3330.78	Ne II	—	[4]	3328.115	W	9	8	3325.889	Nd	10	4
3330.677	Pr	8	1	3328.057	Eu	3	3	3325.864	U	2	—
3330.668	Mn	75	—	3328.037	Nd	8	2	3325.812	Cu II	—	4
3330.663	Mo	—	10	3328.00	Kr I	—	[2]	3325.76	Eu	2 h	—
3330.638	Ce	3	—	3327.991	Ce	5	—	3325.76	U	3 d	1
3330.60	Cr	80	—	3327.983	V I	5	3	3325.741	Ta	50	3
3330.60	Dy	4	2	3327.958	Fe	2	—	3325.732	Nd	4 h	—
3330.594	Sn	100 h	100 h	3327.920	Cb	4	5	3325.729	Pt	2	—
3330.55	Ag	—	2 h	3327.901	Sm	50	20	3325.71	Se	—	[20]
3330.532	W	5	4	3327.899	Ce	12	—	3325.686	Pr	10	1
3330.5	Bi II	—	[10]	3327.88	Dy	2	—	3325.674	Mo	50	25
3330.484	Ce	8	—	3327.875	Yt II	60	60	3325.57	Yb	—	20
3330.475	Th	10	2	3327.812	Hf	5	—	3325.52	Tb	30	—
3330.399	U	8	1	3327.77	Yb	2	10	3325.50	A I	—	[100]
3330.379	Ce	4	—	3327.726	Ag	5	2 h	3325.475	Sm	15	4
3330.341	Gd	10	10	3327.725	Re	15 h	—	3325.467	W	—	7
3330.33	Cs	—	[4]	3327.708	Ru	50	6	3325.462	Fe I	100	80
3330.313	Fe	5	2	3327.688	Nd	12	2	3325.453	Ir	3	1 h
3330.30	N II	—	[5]	3327.685	Na II	6	[20]	3325.436	Cb	—	8 h
3330.294	Mo	—	25	3327.667	Zr II	2	2	3325.394	Ru	3	40
3330.27	Rb	—	[40]	3327.661	Mo	5	4	3325.365	Ti I	2	—
3330.09	Nd	8 d	1 h	3327.661	Ce	12	—	3325.33	La II	2	2
3330.0	Rn	—	[40]	3327.623	W	7	7	3325.329	Ce	25 s	1
3329.988	Sr I	100	10	3327.59	Tm	20	15	3325.28	Dy	2	—
3329.930	Mg I	80	8	3327.560	Ni	15	—	3325.258	Sm	15	5
3329.922	U	10 h	2	3327.504	U	12	6	3325.243	Co I	80	3
3329.91	Rb II	—	[5]	3327.50	Pr	5 d	—	3325.233	Ru	5	—
3329.855	V I	100	40	3327.491	Fe I	15	7	3325.229	Ti I	4	—
3329.83	Ag II	—	2 h	3327.46	Xe II	—	[8]	3325.226	Mo	—	40
3329.804	Eu	3	—	3327.425	Os	80	15	3325.21	Cb	—	15 h
3329.731	Th	5	—	3327.392	Ni I	5	—	3325.168	U	2	2
3329.66	Ho	—	4 h	3327.325	Ti I	2	—	3325.155	Ti I	4	—
3329.659	Er	25	3	3327.301	Mo	40	20	3325.146	Nd	10	—
3329.636	Cu I	60	10	3327.30	Dy	5	2	3325.144	Ce	8	—
3329.623	Sm II	8	2	3327.244	U	2	1	3325.132	Th	10	15
3329.619	Cb	3	3	3327.24	Cr I	8 h	—	3325.131	Mo	4	—
3329.535	Ta	18	1	3327.23	Pd II	—	50 h	3325.063	Ce	4	—
3329.533	Eu	9	5	3327.225	Ce	10	—	3324.997	U	10	—
3329.532	Fe	35	6	3327.204	Re	10	—	3324.995	Ru I	60	12
3329.5	air	—	10	3327.194	Th	5	5	3324.985	Ce II	15	—
3329.471	Co I	80	—	3327.171	Pt I	3	—	3324.933	Re I	25	—
3329.456	Ti II	80	200 r	3327.17	Rb	—	[15]	3324.870	Sm	3	—
3329.428	Cs II	—	[10]	3327.16	Ne II	—	[18]	3324.847	Ta	5	1
3329.361	Cb	10	15	3327.150	Ag	—	2 h	3324.789	Fe	2	—
3329.349	Gd	2	2	3327.147	Nd	8	2 h	3324.764	Ce	12	—
3329.305	U	6	2	3327.11	Tb	15	3	3324.754	Ti I	10	1
3329.25	Te	—	[100]	3327.1	Rn	—	[2]	3324.754	Th	10	10
3329.217	Os	3	3	3327.087	Eu	3	2	3324.749	Os	15	8
3329.215	Mo	2	100	3327.08	Dy	9	2	3324.689	W	8	7
3329.20	Ne II	—	[12]	3327.051	Co	2	3	3324.660	Cb	4	50
3329.16	Cb	—	8 h	3326.991	Co	100	—	3324.606	Ti I	2	—
3329.129	Zr	2	—	3326.977	Sm	3	2 h	3324.60	U	3 d	1
3329.126	Os	20	5	3326.947	Ce	15	—	3324.594	Ce	3	—
3329.12	Cl II	—	[150]	3326.900	Ir I	10	1	3324.58	N II	—	[5]
3329.08	Tb	30	8	3326.88	Er	9	1	3324.556	Cb	2	10
3329.07	La II	4	4	3326.876	Re	3 h	—	3324.551	Pr	10	1
3329.054	Fe	8	3	3326.797	Zr II	100	100	3324.537	Fe I	100	80
3329.053	Cr I	30	6	3326.765	Ti II	15	125	3324.5	Cs	70	[4]
3329.035	Mo	15	—	3326.670	Ni I	5	—	3324.40	Tb	—	50
3329.025	Co I	20	—	3326.639	Ti I	3	—	3324.393	V I	7	6
3329.02	Ho	4	6 h	3326.619	Cb	10	5	3324.390	Ca	1 h	6

3324.3—3317.7 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
3324.366	Fe	5	3	3321.912	Co I	25	-	3319.684	Cu I	60	20
3324.346	Cr	10	60	3321.857	Eu	5	-	3319.666	W	4	2
3324.33	Os	50 d	15 d	3321.707	U	5	1	3319.643	Pr	8	-
3324.20	Dy	3	-	3321.700	Ti II	15	12b	3319.63	Lu	-	3 h
3324.18	Hf II	8	6	3321.685	V I	12	-	3319.63	Th	3	3
3324.17	Yb	6	20	3321.588	Ti I	15	15	3319.63	Ca	-	8
3324.136	Pr	10	1	3321.58	A I	-	[5]	3319.593	Mo	10	5
3324.060	Cr II	20	20	3321.565	W	8	7	3319.584	Cb	4	50
3324.058	W	8	7	3321.545	Rb II	-	[60]	3319.58	U	8 d	-
3324.031	U	3	-	3321.538	V	3	150	3319.563	Sm	8	2
3323.976	Ce	2	-	3321.515	I	-	[7]	3319.561	Co I	8	-
3323.95	Dy	2	-	3321.462	Re	10	-	3319.54	Er	2	1
3323.949	Mo	40	25	3321.453	Th	10	12	3319.531	W	-	10
3323.940	Ru	5	-	3321.395	Nd	8	-	3319.524	Ru I	10	-
3323.933	Ca	-	5	3321.344	Sr II	-	10 d	3319.478	Co	80	-
3323.896	Ti I	3	-	3321.343	Be I	1000 r	30	3319.47	Ta	3	1
3323.894	Cb	1	50	3321.30	F	-	[3]	3319.421	Dy	4	-
3323.89	Tb	15	3	3321.275	Ce	3	-	3319.41	Yb	25	-
3323.82	A I	-	[30]	3321.254	Ru	12	-	3319.345	A I	-	[300]
3323.803	Ti I	5	-	3321.242	Ni I	4	-	3319.324	U	3	6
3323.795	Pt I	150	10	3321.196	Mo	1	15	3319.261	Cb	5	5 h
3323.769	Sm	15	8	3321.19	Cr	20	1	3319.249	Fe	70	50
3323.75	Ne II	-	[40]	3321.184	Sm II	50	15	3319.237	Cb	5	5
3323.737	Fe	150	150	3321.17	Ti II	-	[25]	3319.209	U	10	6
3323.660	Ti I	2 h	-	3321.16	Kr II	-	[8]	3319.185	Ir	3	-
3323.61	B II	-	10	3321.15	Tb	30	30	3319.18	Yb	4	10
3323.53	Cr	-	12	3321.133	W	6	5	3319.16	Tb	15	-
3323.50	I	-	[3]	3321.11	Ho	-	4	3319.156	Co I	60	-
3323.452	Ce	2	-	3321.086	Be I	100	15	3319.122	Sm	8	2
3323.409	W	5	8	3321.03	Br	-	[6]	3319.092	Ir	3	-
3323.38	Tb	15	3	3321.013	Be I	50	-	3319.083	Ti II	3	4
3323.36	Hf II	12	15 h	3320.987	Pd I	15	-	3319.04	Nd	10	2
3323.34	Rb	-	[10]	3320.95	W II	-	9	3319.025	Zr II	25	6
3323.34	B II	-	10	3320.940	Ce II	10	-	3319.024	V I	15	1 h
3323.294	Ce	10	-	3320.92	U	1	2	3319.022	W	-	4
3323.27	Dy	4	-	3320.902	Mo	3	80	3318.984	Cb	10	5
3323.25	Cr	25	-	3320.81	Th	-	10 h	3318.981	Th	8	8
3323.22	Tm	20	40	3320.81	air	-	6	3318.964	Ce II	15	1
3323.21	Ho	-	4	3320.810	Cb	3	100	3318.908	Ru	12	3
3323.20	B II	-	5	3320.787	Ce II	8	-	3318.907	V	-	60
3323.20	Er	25	4	3320.785	V	-	8 h	3318.87	air	-	6 wh
3323.19	Au I	10	5	3320.779	Fe	30	12	3318.85	U	8 d	4
3323.172	Os	3 h	3 h	3320.779	Ni I	10	-	3318.840	Ta	125	35
3323.119	U	2	1 h	3320.73	I	-	[5]	3318.822	Ru	50	8
3323.100	Ce	3	-	3320.709	Sc II	5	-	3318.771	Er	15	1
3323.092	Rh I	1000	200	3320.693	Mn	60	30 h	3318.74	Hf II	3	-
3323.068	Fe II	-	100	3320.651	Re	2	-	3318.672	Ir	2 h	-
3323.06	Te	-	[15]	3320.650	Fe I	20	10	3318.671	Re	30	-
3323.06	Ba I	2	-	3320.587	Sm	4	2	3318.65	Au	3	4 h
3323.988	Zr II	10	10	3320.553	Ce	5	-	3318.590	Os	6	5
3323.937	Ti II	80	300 R	3320.51	Cl	-	[15]	3318.534	Ta	70	3
3323.936	Nd	25	2	3320.437	Gd	3	3	3318.53	Yt II	12	4
3323.93	U	4 d	1	3320.425	Os	10	8	3318.512	Zr II	6	4
3323.916	Ce	2	1	3320.423	Ce	12	-	3318.47	Al	-	2
3323.874	Ba I	30 r	-	3320.422	Sc II	5	12	3318.448	Ir	3	-
3323.871	Ir I	20	15	3320.39	Ca	-	6 h	3318.44	Rn I	-	[5]
3323.807	Cb	3	2	3320.370	W	9	8	3318.42	Dy	2	2
3323.8	Cs	-	[4]	3320.359	Ir I	2	-	3318.413	Nd	8	2
3323.743	Eu	3	-	3320.337	U	2	1	3318.403	Ce	8	-
3323.70	Cr	1	20	3320.31	Yb	3	20	3318.400	Co I	35	-
3323.675	W	-	5	3320.302	Th	10	12	3318.366	Mo	4	3 h
3323.670	U	4	2	3320.29	Ne II	-	[4]	3318.362	Ti I	12	6
3323.634	Ce	10	-	3320.285	Mo	8	2	3318.292	Cb	1	5
3323.603	Ir I	30	18	3320.257	Ni I	400 w	15	3318.28	Hf	6	-
3323.478	Re I	150	-	3320.24	Ho	6	8	3318.273	U	5	1
3323.477	Fe	150	100	3320.163	Sm II	40	8	3318.26	Tm	6	15
3323.47	Th	2	2	3320.151	Au I	20	5	3318.23	Er	10	1
3323.44	A I	-	[5]	3320.141	V I	12	3	3318.167	Os	4	4
3323.310	Ni I	400	10	3320.14	Eu	3	2 h	3318.14	N II	-	[5]
3323.3	Rb	-	[15]	3320.14	Cl II	-	[30]	3318.13	Dy	4	2
3323.30	Ca	1	7	3320.06	A I	-	[3]	3318.095	U	5	3
3323.30	Ti II	-	[25]	3319.975	Pr	8	2	3318.08	Cr	80 Wh	-
3323.282	Zr	7	1	3319.914	Th	2	3	3318.05	Tb	15	3
3323.266	Pr	7	2	3319.91	Tb	8	1	3318.032	Na II	6	[20]
3323.261	Eu	20	2	3319.91	Ti II	-	[35]	3318.025	Ti II	60	125
3323.246	W	10	12 d	3319.902	Os	4	5	3317.989	W	8	7
3323.231	Sr I	100	8	3319.887	Eu	20	5	3317.988	Hf II	25	18
3323.226	Ru	8	-	3319.887	Dy	150	9	3317.965	Ru	30	-
3323.205	Re I	25 W	-	3319.872	Er	18	1	3317.928	Ta	200	25 W
3323.199	Co I	100 W	-	3319.87	Ho	6	6	3317.912	V	-	80
3323.175	Ce	2	-	3319.825	Co I	35	2	3317.901	Ce	4	-
3323.170	Mo	4	30	3319.808	Ru I	6	-	3317.888	Ru I	50	12
3323.118	U	18	12	3319.780	Er	4	1	3317.866	Sm	8	2
3323.051	Os	10	10	3319.78	Yt II	7	10	3317.857	Os	8	8
3321.94	Ti	-	[3]	3319.75	Ne II	-	[7]	3317.797	Ce	15	2

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3317.787	U	10	—	—	—	3315.44	Cl II	50	—	[100]	Ks	3313.221	W	3	—	12 d	—
3317.75	Th	6	6	—	—	3315.421	Os	15	—	—	—	3313.16	Cs I	10	—	—	Bv
3317.693	Sc II	2	2 h	—	—	3315.38	Yb	3	20	—	—	3313.146	Nd	10	—	2	—
3317.62	Hg	—	—	[5]	Ps	3315.324	Ti II	12	100	—	—	3313.120	Co	10	—	—	—
3317.62	Th	6 d	4 d	—	—	3315.29	Cr	—	8	—	—	3313.086	Cb	5 h	3 h	—	—
3317.606	U	4	—	—	—	3315.237	Ti I	6	—	—	—	3313.08	U	5 d	3	—	—
3317.597	Ru	3	15	—	—	3315.228	Ru I	60	25	—	—	3313.04	Dy	3	—	—	—
3317.59	Pr	4	—	—	—	3315.219	Cb	20	20	—	—	3313.010	V I	5	3	—	—
3317.58	Tb	8	3	—	Ed	3315.20	Cr I	10	—	—	—	3312.992	Ni I	15	—	—	—
3317.54	Sb II	2 h	2 h	—	—	3315.176	V	2	35	—	—	3312.985	Pd I	15	—	—	—
3317.53	Ca	1 h	8	—	Ad	3315.112	Ce	8	—	—	—	3312.97	A	—	—	[3]	Rt
3317.525	Ir I	2	—	—	—	3315.10	Yb	10 wh	—	—	—	3312.94	Mo	1	—	60	—
3317.47	U	15	2	—	—	3315.091	W	12	10	—	—	3312.918	Pr	9	2	—	—
3317.43	U	2 d	—	—	—	3315.07	Tb	15	3	—	Ed	3312.865	Hf	30	10	—	—
3317.399	W II	1	15	—	—	3315.057	U	2	—	—	—	3312.829	Co I	20	—	—	—
3317.319	Ir I	2	—	—	—	3315.047	Ru I	50	12	—	—	3312.8	Rn	—	—	[100]	Wo
3317.305	Mn	100	30 h	—	—	3315.046	Pt I	200	10	—	—	3312.80	Tb	15	3	—	Ed
3317.30	Hg II	—	[10]	—	Ps	3315.035	Co I	10	—	—	—	3312.78	Cl II	—	—	[15]	Ks
3317.276	Os	6	5	—	—	3315.01	Nd	20	—	—	—	3312.743	Nd	10	2	—	—
3317.268	Eu	3	2	—	—	3314.978	Pr	10	1	—	—	3312.736	Sc II	5	8	—	—
3317.229	Gd	2	—	—	—	3314.95	Dy	8	2	—	—	3312.729	Dy	50	5	—	—
3317.224	Ce	2	—	—	—	3314.941	Er	12	1	—	—	3312.703	Fe II	5	3	—	—
3317.224	Hf II	6	1	—	—	3314.93	Sm	3 d	1 h	—	—	3312.70	Cr	3	—	—	—
3317.223	Cu I	60	20	—	—	3314.904	Mn	35	—	—	Fu	3312.700	U	15 r	—	—	—
3317.121	Fe I	100	80	—	—	3314.889	Al II	—	—	[5]	Sy	3312.690	Ti I	15	4	—	—
3317.119	Dy	35	4	—	—	3314.831	Th	10	10	—	—	3312.64	Ag	—	—	8 h	—
3317.074	W	6	5	—	—	3314.774	Ru	20	1	—	—	3312.600	Cb	40	50	—	—
3317.04	Mo	—	20	—	—	3314.77	Os	15 h	12	—	—	3312.53	Tb	15	3	—	Ed
3317.038	Sc II	5	8	—	—	3314.742	Fe	200	200	I	—	3312.488	Pt	2	2 h	—	—
3317.017	Re	5	—	—	—	3314.721	Ce II	25	3	—	—	3312.424	Er	25	15	—	—
3316.983	Ce	5	—	—	—	3314.563	Cr	10	100	—	—	3312.415	Sm II	12	10	—	—
3316.917	Nd	4	—	—	—	3314.541	Rh I	4	—	—	—	3312.4	air	—	7	—	—
3316.905	W	5	9	—	—	3314.536	W	5	3	—	—	3312.40	U	4	3	—	—
3316.902	Ru	5	50	—	—	3314.523	Ti I	10	5	—	—	3312.39	Yt II	10	10	—	—
3316.876	V	—	60	—	—	3314.50	S II	—	—	[8]	Hn	3312.330	Mo	15	8	—	—
3316.87	Tm	60	20	—	Me	3314.495	Zr II	15	10	—	—	3312.33	Dy	4	2	—	—
3316.86	Cl II	—	[50]	—	Ks	3314.463	Mo	—	20	—	—	3312.321	Pr	9	2	—	—
3316.84	Yb	5	15	—	—	3314.447	Fe	15	6	—	—	3312.320	Ni I	70	2	—	—
3316.704	U	6	3	—	—	3314.427	Er	15	2	—	—	3312.31	Hg II	—	—	[18]	Ps
3316.69	Mo	—	8	—	—	3314.424	Mn	30 h	—	—	Fu	3312.294	Re I	25	—	—	—
3316.688	Os	30	15	—	—	3314.423	Ti I	40	20	—	—	3312.277	Co I	3	—	—	—
3316.636	Ir	8	—	—	—	3314.38	Tb	15	3	—	Ed	3312.226	Fe	5	2	—	—
3316.621	Cb	1	20	—	—	3314.376	Pr	12	2	—	—	3312.224	Ru	4	—	—	—
3316.582	Sm	25	10	—	—	3314.345	Co I	8	—	—	—	3312.215	Ce	30	5	—	—
3316.544	U	10	1 h	—	—	3314.303	W	—	8	—	—	3312.179	Cr II	5	125	—	Hi
3316.540	Ce	5	—	—	—	3314.19	Cr I	8	—	—	—	3312.17	Eu	3 w	1	—	—
3316.503	Cr I	20	10	—	—	3314.076	Co I	100	—	—	—	3312.148	Co I	60	2	—	—
3316.50	Mo	4 d	1	—	—	3314.072	Fe I	5	2	—	—	3312.134	Ir I	25	15	—	—
3316.48	Mn	20 h	—	—	Fu	3314.058	Ru	8	—	—	—	3312.11	Lu	100	10	—	Me
3316.476	Eu	2	—	—	—	3314.053	Cr	—	30	—	—	3312.081	Cr I	10	—	—	—
3316.39	Xe II	—	[5 h]	—	Hu	3314.052	U	4	3	—	—	3312.08	Th	3	4	—	—
3316.389	Ti I	5	—	—	—	3314.04	Cs I	5	—	—	Bv	3312.027	Os	8	5	—	—
3316.386	Ru I	80	—	—	—	3314.035	Ce	20	—	—	—	3311.929	Cr II	6	125	—	Hi
3316.385	Er	12	5	—	—	3314.03	Hf II	5	1	—	Me	3311.905	Mn	75	4	—	—
3316.37	Ho	—	4	—	Ex	3314.023	W	9	6	—	—	3311.85	Sr	1	4	—	Sd
3316.325	Dy	50	4	—	—	3314.01	Ho	—	4	—	Ex	3311.80	Xe II	—	—	[2]	Hu
3316.324	Mn	12	—	—	—	3313.97	V I	10	—	—	Me	3311.732	Ce	2 h	—	—	—
3316.31	Ag	—	4 wh	—	—	3313.950	Re I	40	—	—	—	3311.72	U	10 d	12	—	—
3316.277	Cu II	—	10	—	—	3313.94	U	10	10	—	—	3311.708	Sc II	3	6	—	—
3316.23	Th	5	3	—	—	3313.893	Mo	3	—	—	—	3311.52	Cs	—	—	[4]	Be
3316.23	Cr	10	—	—	—	3313.734	Gd	5	5	—	—	3311.51	Dy	5	—	—	—
3316.207	Zr I	4	—	—	—	3313.728	Fe I	3	1	—	—	3311.497	Ce	15	1	—	—
3316.20	Nd	12	6 h	—	—	3313.721	Cr	30	1	—	—	3311.46	Ca	—	6	—	Ad
3316.195	Sm II	5	2	—	—	3313.718	U	2	1	—	—	3311.453	Fe I	1	1	—	—
3316.19	Hf	15	—	—	—	3313.698	Zr II	10	10	—	—	3311.388	Ce	3	—	—	—
3316.17	Tm	10	20	—	Me	3313.680	Ce	2 h	—	—	—	3311.382	W	15 l	12	—	—
3316.14	Rn I	—	[3]	—	Rs	3313.653	Er	10	2	—	—	3311.35	U	4 d	1 h	—	—
3316.113	Ce	2	—	—	—	3313.65	Cb	—	5 s	—	—	3311.339	Zr II	8	3	—	—
3316.086	W	10 s	9	—	—	3313.650	Th	4	50 h	—	—	3311.338	Cb	5	10	—	—
3316.06	Er	8	—	—	—	3313.624	Mo	5	50	—	—	3311.30	Ne II	—	—	[7]	Bn
3316.047	U	8	—	—	—	3313.595	W	4	10 l	—	—	3311.30	Cr I	8	—	—	—
3316.011	Nd	10	4	—	—	3313.539	Sc II	3	10	—	—	3311.26	A	—	—	[5]	Rt
3315.803	Ba	10	—	—	Sz	3313.531	Ce	8	—	—	—	3311.162	Ta	300 w	70 w	—	—
3315.785	Ti I	5	—	—	—	3313.524	Mn	12	—	—	—	3311.112	W	5	4	—	—
3315.72	Kr II	—	[15 h]	—	Me	3313.49	Er	6	1	—	—	3311.09	Er	3	—	—	—
3315.688	Os	40	15	—	—	3313.48	Xe	—	—	[2 h]	Hu	3311.023	Pd	4	2 h	—	—
3315.663	Ni I	400 R	20	—	—	3313.47	Tb	8	—	—	Ed	3311.023	Ir I	2	—	—	—
3315.66	Ho	4	6	—	Ex	3313.467	Al II	—	—	[2]	Sy	3311.00	Cu I	3	—	—	He
3315.62	Tb	8	3	—	Ed	3313.459	Os	10	5	—	—	3310.96	Dy	5	3	—	—
3315.614	Al II	—	[2]	—	Sy	3313.395	Cb	—	10 h	—	—	3310.957	Ru I	30	5	—	—
3315.597	Gd	2	1	—	—	3313.351	Al II	—	—	[10]	Sy	3310.912	Os	200	30	—	—
3315.522	V	—	4	—	—	3313.323	Eu	35	40	—	—	3310.900	Nd	25	2	—	—
3315.498	Ca	—	[10]	—	Sv	3313.31	Dy	10	4	—	—	3310.877	Ce	10	—	—	—
3315.446	Nd	12	—	—	—	3313.300	Ce	18	1	—	—	3310.87	U	2 d	2	—	—
3315.442	Ru	30	5	—	—	3313.223	Mn	50	—	—	Fu	3310.856	Hf II	15	8	—	—

3310.8—3303.9 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3310.80	Eu	3 wh	1	-	3308.69	Er	3	-	-	3306.17	Kr I	-	[7]	Me
3310.80	Tb	8	3	Ed	3308.626	Ru I	10	-	-	3306.157	W	-	7	-
3310.771	Mo	20	20	-	3308.545	Ta	20	1 h	-	3306.118	Hf	15	3	-
3310.662	Cb	-	15 wh	-	3308.51	Tb	15	8	Ed	3306.053	Ti II	-	10	-
3310.655	Sm II	25	10	-	3308.488	Co I	30	-	-	3306.048	Ce	8	-	-
3310.647	Cr	2	200	-	3308.479	V	-	80	-	3306.02	Tm	20	15	Me
3310.629	Ce	5	-	-	3308.475	Re	4	-	-	3305.971	Fe I	400	300	I
3310.624	U	10	-	-	3308.47	Yt II	10	20	m	3305.96	Zn II	-	[20]	Vs
3310.62	La II	2	3	Me	3308.465	Sm	3	2	-	3305.926	U	10	12	-
3310.587	Tm	60	20	Me	3308.442	Ir I	2	-	-	3305.905	Mo	15	10	-
3310.551	Zr	3	-	-	3308.43	U	6	1	-	3305.845	Ir	3	1	-
3310.525	Ir I	30	12	-	3308.391	Ti I	50	10	-	3305.752	Ti I	3	-	-
3310.52	Th	3 d	4 d	-	3308.342	W	3 d	25	-	3305.750	Sm	5	4	-
3310.51	Ag I	2	-	Bx	3308.342	Pr	10	1	-	3305.731	Co I	20	-	-
3310.50	U	6 d	8 d	-	3308.310	Au I	50	15	-	3305.73	Yb	30	125	-
3310.489	Fe	50	40	-	3308.271	Ce	2	-	-	3305.73	Tb	8	-	Ed
3310.47	A	-	[3]	Ms	3308.250	Re	20	-	-	3305.68	Lu	2	1	Me
3310.468	Cb	10	10	-	3308.246	V I	10	1	-	3305.643	Ir I	2	-	-
3310.405	Mo	3	3	-	3308.088	Ce	10	-	-	3305.64	Ag	5	2 h	-
3310.38	Xe	-	[2]	Hu	3308.084	Sm	4 h	1	-	3305.609	Cb	1	100	-
3310.360	Nd	8	2	-	3308.071	Th	2	2	-	3305.568	Er	15	3	-
3310.342	Fe	100	80	-	3308.0	Dy	2	-	-	3305.565	Mo	40	30	-
3310.34	Eu	2 w	2	-	3308.046	Cb	10	10	-	3305.564	W	10	8	-
3310.329	Sm	4	-	-	3308.018	Eu	20	30	-	3305.47	Dy	10 d	5 d	-
3310.274	Hf	20	5	-	3308.017	Ce	15	-	-	3305.4	bh B	50	-	L
3310.249	Th	8	15	-	3308.01	Tm	20	15	Me	3305.377	Os	20	10	-
3310.202	Ni I	50	-	-	3308.0	bh Ca	4	-	L	3305.37	Tb	8	3	Ed
3310.20	W	-	12	-	3307.984	Ru I	50	-	-	3305.337	Ta	15	1 h	-
3310.123	Pd I	6	-	-	3307.97	Nd	20	2	-	3305.33	Nd	8	2	-
3310.093	Cb	3	5 h	-	3307.948	Cu I	60	30	IBu	3305.318	Th	2 h	-	-
3310.086	Ru	4	-	-	3307.948	Rh I	5	-	-	3305.296	Ti I	7	-	-
3310.057	Mo	4	8	-	3307.90	Cl II	-	[50]	Ks	3305.25	Yb	20	-	-
3309.99	I	-	[5]	Bl	3307.802	Nd	15	2	-	3305.25	Mo	-	15	-
3309.90	Au II	-	3 h	Ex	3307.80	Tb	8	3	Ed	3305.23	Cr	25	-	-
3309.889	Zr II	5	3	-	3307.755	Cr I	40	8	-	3305.179	Sm II	15	7	-
3309.836	Cr	30	2	-	3307.717	Ti II	6	12	-	3305.172	Rh I	40	10	-
3309.834	Ce	5	-	-	3307.630	Ir I	5	-	-	3305.16	Ho	6	4 h	Ex
3309.825	Ru	4	-	-	3307.554	U	8	6	-	3305.152	Zr II	25	20	-
3309.80	Tm	80	60	Me	3307.544	Ru	8	-	-	3305.135	Fe	5	2	-
3309.800	Cb	3	4	-	3307.534	Sr I	200	10 s	ISn	3305.124	U	2	1 h	-
3309.78	Ne II	-	[7]	Bl	3307.473	Co I	4	-	-	3305.120	Er	5 wh	-	-
3309.778	Ta	70	5	-	3307.46	Er	12	2	-	3305.110	Co I	8	-	-
3309.730	Ti I	12	2	-	3307.44	Tb	30	15	Ed	3305.09	O II	-	[20 I]	Mh
3309.667	Os	10	8	-	3307.428	Mo	-	50	-	3305.09	Hg I	2	-	Cn
3309.659	U	10	2	-	3307.30	Eu	2 h	2	-	3305.051	Ce	10	-	-
3309.54	Rh	2	-	-	3307.24	A	-	[15]	Rt	3304.95	Tb	15	3	Ed
3309.516	Sm II	20	8	-	3307.233	Ce II	25	1	-	3304.950	Ni I	23	-	-
3309.501	Ti I	60	25	-	3307.232	Fe	80	60	-	3304.923	Ir I	8	-	-
3309.500	Ce	2	-	-	3307.154	Co I	80	-	-	3304.894	Mn	8	8 h	-
3309.473	W	8	7	-	3307.146	Fe	3	2	-	3304.836	Ce	30	3	-
3309.428	Ni	4	-	-	3307.122	Mo	30	15	-	3304.832	Cb	10	5	-
3309.42	Mo	3	25	-	3307.077	Ta	35	1 h	-	3304.825	Ru I	50	3	-
3309.395	Ir I	5	1 h	-	3307.07	Pd	4 l	-	-	3304.80	Zn II	-	[2]	Vs
3309.39	A	-	[3]	Rt	3307.016	Sm	40	15	-	3304.790	Co I	5	-	-
3309.39	Xe	-	[2 h]	Hu	3307.013	Ni I	3	-	-	3304.76	Yb	12	40	-
3309.37	Yb	12	30	-	3307.012	Fe	5	4	-	3304.741	Cr	-	2	-
3309.362	Th	4	1	-	3307.010	Re	15 h	-	-	3304.717	Cb	1	30	-
3309.321	Re	6	-	-	3307.005	Mn	15	-	-	3304.71	Dy	3	-	-
3309.281	Cb	-	10	-	3306.99	Te	-	[150]	Bl	3304.649	Nd	8	-	-
3309.273	Ce	10	1	-	3306.98	La II	10	8	-	3304.639	Ru I	6	-	-
3309.212	U	-	3 h	-	3306.93	Rb	-	[15]	Ok	3304.63	Sb II	-	2	Dv
3309.2	Pb II	-	[15]	Ea	3306.91	Tm	25	20	Me	3304.56	Yb	15	40	-
3309.187	Hf	15	1	-	3306.879	Ti I	30	12	-	3304.521	Sm II	30	8	-
3309.176	V I	30	20	-	3306.79	Dy	2	2	-	3304.52	Mo	-	20	-
3309.17	Tb	15	3	Ed	3306.785	Pr	5	-	-	3304.507	Ru I	12	2	-
3309.137	Th	6	8	-	3306.78	Yb	10	30	-	3304.495	Eu	20	-	-
3309.132	Ce	8	-	-	3306.7	Rn	-	[100]	Pe	3304.47	W	10 w	20	-
3309.128	Pr	10	1	-	3306.648	Mo	8	5	-	3304.470	V	-	125	-
3309.017	Co	2	-	-	3306.632	Ce	20	-	-	3304.42	Rb	-	[20]	Ok
3308.977	Eu	2 h	2	-	3306.616	Sm	10	4	-	3304.375	Ta	70	15	-
3308.932	Sm	10	4	-	3306.54	O II	-	[20 I]	Mh	3304.326	Cr I	30 h	-	-
3308.898	U	3	3	-	3306.50	A	2	-	[3]	3304.30	Dy	4	-	-
3308.89	Dy	25	-	-	3306.481	Re	2	-	-	3304.239	Th	15	3	-
3308.886	Ta	18 w	-	-	3306.45	Cl II	-	[40]	Ks	3304.224	Mo	25	10	-
3308.88	Er	15	2	-	3306.41	Tb	15	-	Ed	3304.200	Eu	7	2	-
3308.876	Re	15	-	-	3306.375	Nd	12	12	-	3304.140	Rh I	4	-	-
3308.86	Ho	-	4	Ex	3306.372	Sm II	100	40	-	3304.119	Co I	15	-	-
3308.85	P II	-	[100 w]	Gu	3306.354	Fe I	200	150	I	3304.11	Sb	-	40 wh	Sp
3308.809	Co I	40	-	-	3306.278	Zr II	80	80	-	3304.10	Tb	15	3	Ed
3308.806	Ti II	35	100	-	3306.275	Pr	6	2	-	3304.074	Er	10	-	-
3308.80	Ca	1 h	7	-	3306.233	Os	80	12	-	3304.039	Ta	35	3	-
3308.785	Mn	20	-	-	3306.217	U	6	6	-	3304.022	Ce	3	-	-
3308.749	Fe	5	3	-	3306.19	Dy	12	6	-	3304.01	Yt II	5	7	-
3308.719	U	2	1	-	3306.182	Ce	5	-	-	3303.995	Ru	60	8	-
3308.691	Ce	2	-	-	3306.172	Ru I	60	12	-	3303.957	Mo	2	15	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3303.95	Er	10	2	-	-	3301.651	Th	6	1 h	-	-	3299.27	Tb	15	-	-	Ed
3303.89	F II	-	[20]	-	Di	3301.651	V	-	80	-	Me	3299.257	Ta	5	1	-	-
3303.878	Co I	60 r	-	-	-	3301.650	U	6	1	-	-	3299.15	Dy	2	-	-	-
3303.845	U	6	-	-	-	3301.60	K II	-	[10]	-	Bn	3299.14	Eu	2	1 h	-	-
3303.771	Ce	8	-	-	-	3301.600	Re I	50	-	-	-	3299.086	V I	10	2	-	-
3303.753	Re I	40	-	-	-	3301.587	Ru I	70	40	-	-	3299.075	Fe	5	2	-	-
3303.72	Cs	-	[4]	-	Bs	3301.57	Eu	15 w	1	-	-	3299.059	Mo	5	1	-	-
3303.670	Ce	5	-	-	-	3301.56	O II	-	[10 I]	-	Fl	3298.997	Sm	1	2 h	-	-
3303.660	W	6	-	-	-	3301.559	Os I	500 R	50	-	-	3298.97	Cd	15	-	-	Ps
3303.628	Ir	4	-	-	-	3301.55	Ag	-	8 h	-	-	3298.956	Hf	8	6	-	-
3303.605	Sm	5	-	-	-	3301.52	Ca	4	6	-	Ad	3298.940	Rh I	3	-	-	-
3303.60	Dy	2	-	-	-	3301.51	Tm	5	10	-	Me	3298.89	Eu	2	1 h	-	-
3303.597	U	10	12	-	-	3301.491	Cb	1	100	-	-	3298.888	U	5	-	-	-
3303.567	Fe	70	10	-	-	3301.48	Te	-	[5]	-	Bl	3298.805	Eu	3	-	-	-
3303.54	Mo	-	20	-	-	3301.426	Fe	1	-	-	-	3298.736	V II	12	80	-	-
3303.516	Cu II	-	2	-	Sh	3301.41	F II	-	[6]	-	Di	3298.72	La	2 h	3 h	-	Me
3303.487	Th	5	10	-	-	3301.347	Th	6 d	5 d	-	-	3298.72	Te	-	[5]	-	Bl
3303.471	Fe II	5	5	-	-	3301.346	Na II	-	[5]	-	Fr	3298.72	Xe II	-	[4]	-	Hu
3303.370	U	4	3 h	-	-	3301.28	W	2	8	-	-	3298.716	U	4	-	-	-
3303.342	Mo	25	5	-	-	3301.24	Eu	4 w	1	-	-	3298.676	Co I	70	2	-	-
3303.335	W	7	3	-	-	3301.230	Ce	3	-	-	-	3298.66	Tb	30	8	-	Ed
3303.320	Cb	1	30	-	-	3301.228	Cu	-	15	-	Sh	3298.609	Nd	8	6	-	-
3303.278	Mn	40	-	-	-	3301.222	Fe	15	7	-	-	3298.411	Ru I	50	25 R	-	-
3303.225	Ce II	10	-	-	-	3301.22	Cr	-	15	-	-	3298.410	Ir I	2	-	-	-
3303.212	Re	30	-	-	-	3301.18	Te	-	[5]	-	Bl	3298.405	Cb	3	5	-	-
3303.113	Mo	4	2	-	-	3301.13	Br	-	[4]	-	Bl	3298.368	U	4	-	-	-
3303.11	La II	400	150	-	-	3301.094	U	8	1	-	-	3298.346	Ce	15	-	-	-
3303.091	Ir I	3	-	-	-	3301.08	Er	10	-	-	-	3298.32	Eu	5 w	2 w	-	-
3303.080	I II	-	[25]	-	Ke	3300.970	Sm II	20	10	-	-	3298.318	Cr	30	8	-	-
3302.988	Na I	300 R	150 R	-	-	3300.970	Re I	25	-	-	-	3298.224	Mn	50	25 h	-	-
3302.941	Zn	700 R	300 R	-	H z	3300.955	Ce	8	-	-	-	3298.20	Ba	3	4	-	-
3302.94	Ca	4	6	-	-	3300.948	Mn	3	-	-	-	3298.186	Ce	4	-	-	-
3302.913	Ce	10 W	-	-	-	3300.93	Dy	4	2	-	-	3298.139	V I	50	15	-	-
3302.876	Cr	30	2	-	-	3300.908	Nd	8 d	2 d	-	-	3298.133	Fe I	200	150	-	S
3302.859	Fe II	1	5	-	-	3300.903	V	-	35	-	Me	3298.129	W	12 s	10	-	-
3302.82	U	6	4	-	-	3300.885	Cu II	-	6	-	Sh	3298.104	Sm	60	60	-	-
3302.766	Ta	50	1 h	-	-	3300.86	Cl	-	[6]	-	Jv	3298.052	Th	4	1 h	-	-
3302.716	Mo	-	25	-	-	3300.820	W	15 l	12	-	-	3297.955	Ru I	50	6	-	-
3302.666	Zr	10	6	-	-	3300.819	Zr	2	-	-	-	3297.954	Ce	4	-	-	-
3302.66	Pr	15	2	-	-	3300.80	Cr	10	-	-	-	3297.925	Ir	2 h	-	-	-
3302.64	Tb	8	-	-	Ed	3300.75	Eu	4	1 h	-	Kn	3297.891	Fe II	4	15	-	-
3302.621	Cb	1	10	-	-	3300.73	Rb II	-	[10]	-	Ok	3297.886	U	6	18	-	-
3302.588	Zn I	800	300	-	H z	3300.689	Mo	6	6	-	-	3297.85	Yb	4	20	-	-
3302.563	I II	-	[10]	-	Mu	3300.676	U	15 h	8 h	-	-	3297.828	Th	10	12	-	-
3302.55	Bi	150	-	-	To	3300.644	Cu II	-	3	-	Sh	3297.787	Ti I	7	-	-	-
3302.54	Kr I	-	[10]	-	Me	3300.613	Th	5	-	-	-	3297.74	Ne II	-	[40]	-	Bl
3302.51	B	-	10	-	Sy	3300.597	Mo	-	15	-	-	3297.684	Mo	1	60	-	-
3302.492	U	3	1	-	-	3300.577	Er	12	-	-	-	3297.664	Cb	1	30	-	-
3302.489	I II	-	[5]	-	Mu	3300.49	Th	-	30 h	-	Ex	3297.64	Ag	3	4 h	-	Fr
3302.472	Dy	4	2	-	-	3300.465	Rh I	100	20	-	-	3297.64	Pb	-	30	-	Sx
3302.45	Tm	125	80	-	Me	3300.444	Cu II	-	2	-	Sh	3297.634	Zr I	2	-	-	-
3302.44	Yb	7	5	-	-	3300.39	A I	-	[20]	-	Ms	3297.607	Dy	6	2	-	-
3302.432	I II	-	[2]	-	Mu	3300.38	Eu	3	2	-	-	3297.543	Mo	5	-	-	-
3302.328	Ta	3	1 h	-	-	3300.356	Rh I	5	-	-	-	3297.517	V	-	60	-	-
3302.323	Na I	600 R	300 R	-	-	3300.355	Pr	5	1	-	-	3297.508	Ir	3	1 h	-	-
3302.28	Kr	-	[4 h]	-	Me	3300.345	Cb	-	10 h	-	-	3297.48	Eu	3	-	-	-
3302.26	U	1 h	2 h	-	-	3300.337	W	6	10	-	-	3297.373	Th	6	10	-	-
3302.227	Re	30	-	-	-	3300.28	Tb	8	-	-	Ed	3297.290	Cb	5 r	2 h	-	-
3302.19	Cr	50 h	1 h	-	-	3300.18	Kr II	-	[4 wh]	-	Me	3297.286	Rh I	5	-	-	-
3302.176	Cb	5	10	-	-	3300.152	Ce	30	3	-	-	3297.258	Ru	50	4	-	-
3302.17	Yt	5	2	-	Ed	3300.148	Nd	10	6	-	-	3297.253	Ti I	3	-	-	-
3302.128	Pd I	1000 wh	200 h	-	-	3300.105	Sm	9	2	-	-	3297.199	Cu II	-	5	-	Sh
3302.12	Pt	2 h	-	-	-	3300.09	F	-	[3 hd]	-	Di	3297.193	Ta	18 h	1 wh	-	-
3302.096	Ti II	8	20	-	-	3299.985	Ce	15	1	-	-	3297.15	La II	2	2	-	-
3302.092	Sm	8	4	-	-	3299.973	V I	5	4	-	-	3297.095	Ti I	4	-	-	-
3302.02	Dy	2	-	-	-	3299.96	Tb	15	-	-	Ed	3297.06	Ho	-	4 h	-	Ex
3301.95	Eu	25	2	-	-	3299.86	Cs	-	[6]	-	Sv	3297.048	Cb	3	50	-	-
3301.93	Er	15	2	-	-	3299.791	Ru I	3	-	-	-	3296.991	Re I	60	-	-	-
3301.911	Ru	30	8	-	-	3299.79	Bi II	-	[15]	-	MI	3296.973	Zr	2	-	-	-
3301.905	Ce	10	-	-	-	3299.784	Mo	3	-	-	-	3296.883	Ce	25	2	-	-
3301.898	Pr	10	-	-	-	3299.767	Ta	70	10	-	-	3296.882	Mn	60	30	-	-
3301.895	Ta	25	3	-	-	3299.738	W	3	12	-	-	3296.803	Fe	3	2 h	-	-
3301.87	A	-	[10]	-	Rt	3299.697	U	8	6	-	-	3296.763	Ce	2	-	-	-
3301.861	Pt I	300	250 W	-	-	3299.669	Th	5	8	-	-	3296.786	He I	-	[7]	-	Ps
3301.86	Al	-	2	-	Gn	3299.609	Cb	5	10	-	-	3296.733	Zr I	3	-	-	-
3301.85	W II	1	10	-	-	3299.57	Bi II	-	[10]	-	MI	3296.717	Rh I	40	10	-	-
3301.757	Ir I	2	-	-	-	3299.56	Cb	-	10	-	-	3296.698	Re I	80	-	-	-
3301.754	U	10	3	-	-	3299.506	Fe I	4	2	-	-	3296.649	Ru I	50	5	-	-
3301.75	Kr II	-	[5 h]	-	Me	3299.453	Ag	-	5 h	-	-	3296.607	Th	8	10	-	-
3301.734	Sr I	100	10	-	ISn	3299.42	Er	10	-	-	-	3296.582	Mo	-	25	-	-
3301.72	Dy	2	-	-	-	3299.413	Ti I	50	35	-	-	3296.56	F II	-	[15]	-	Di
3301.707	Mo	4	4	-	-	3299.39	Zn II	-	[15]	-	Vs	3296.478	Cb	5	3	-	Me
3301.68	Er	3	-	-	-	3299.375	U	4	2	-	-	3296.467	Fe	12	6	-	-
3301.672	Sm II	15	8	-	-	3299.334	Ru I	50	4	-	-	3296.404	Mo	15	5	-	-
3301.652	Ce	3	-	-	-	3299.3	Bi II	2 h	3	-	MI	3296.398	Zr II	8	6	-	-

3296.3—3287.8 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3296.390	Pr	10	2	-	3293.707	W	10	10	-	3290.508	W	6	5	-
3296.373	Ti	7	-	-	3293.67	Yt	2	2	-	3290.473	U	6	5	-
3296.311	Dy	10	2	-	3293.66	A	-	[25]	Rt	3290.42	Ca	1 h	3	Ad
3296.29	Mo	-	5	-	3293.656	Mo	6	1	-	3290.381	Sm II	10	8	-
3296.226	U	6	-	-	3293.64	Th	3 d	3 d	-	3290.341	Ce II	20	1	-
3296.218	Ti I	2	-	-	3293.605	Sm	5	1	Kn	3290.282	Sm	10	4	-
3296.19	F II	-	[3]	Di	3293.597	Th	4	4	-	3290.263	Os	200	20	-
3296.185	Ce	20	2	-	3293.595	Zr	2	-	-	3290.258	Ir I	2	-	-
3296.111	Ru I	50	10	-	3293.590	U	30	5	-	3290.238	V	2	70	-
3296.052	V	-	30	-	3293.589	Ce	18	-	-	3290.220	Pt I	150	10	-
3296.032	U	2	-	-	3293.536	Sm II	3	1	-	3290.127	Th	6	5	-
3296.03	Tb	8	-	Ed	3293.450	Zr I	2	-	-	3290.121	U	8	-	-
3296.027	Mn	20	-	-	3293.43	Te	-	[10]	Bl	3290.098	Re I	5 h	-	-
3296.012	Cb	20	40	-	3293.43	Yt	2	2	-	3290.08	O II	-	[18]	Mh
3295.92	Dy	2	1	-	3293.360	Sm II	15	8	-	3290.042	U	8	-	-
3295.91	Bi	-	2	Om	3293.328	U	2	-	-	3290.041	Fe	3	2	-
3295.90	I	-	[2]	Ke	3293.212	Co I	15	-	-	3290.008	Cb	10	10	-
3295.816	Fe II	4	30	-	3293.162	Os	4	3	-	3289.95	A I	-	[3]	Ms
3295.806	Sm II	30	10	-	3293.150	V	-	50	-	3289.944	Ce	-	-	Kn
3295.770	Th	3	-	-	3293.142	Fe	10	5	-	3289.85	Yb	1000	-	-
3295.655	Ti I	5	-	-	3293.07	Tb	50	100	Ed	3289.85	Yt	15	10	-
3295.529	Th	10	10	-	3293.01	Ag	-	2 h	-	3289.844	Mo	10	10	-
3295.528	Pr	10	2	-	3292.983	Mo	1	10	-	3289.838	Ta	25	1	-
3295.518	U	4	6	-	3292.943	U	10	2	-	3289.790	Ce	2	-	-
3295.503	Cb	1	20	-	3292.929	Ce	12	-	-	3289.749	U	2	1	-
3295.467	Ag	-	4 h	-	3292.903	Cu I	8	2	Ha	3289.74	Hf II	5	3	Me
3295.45	Eu	2 w	-	-	3292.830	Cu I	10	2	-	3289.72	Ci	-	[12]	Jv
3295.440	Sm	30	10	-	3292.802	W	7	5	-	3289.636	Rh	50 r	5	-
3295.432	Mo	5	5	-	3292.590	Fe I	300	150	-	3289.548	Cb	-	10	-
3295.427	Cr II	10	200	-	3292.518	Th	10	12	-	3289.523	Ce	2	-	-
3295.420	Fe II	1	4	Do	3292.51	Ca	1 h	3	Ad	3289.450	Cb	2	1	-
3295.383	U	3	1	-	3292.482	Ta	70	3	-	3289.436	Fe	10	4	-
3295.33	Tb	15	3	Ed	3292.393	Cu I	6	1 h	-	3289.39	A I	-	[3]	Ms
3295.326	Ta	125 W	20 w	-	3292.372	Cb	-	20	-	3289.389	V II	10	70	-
3295.320	Th	10	10	-	3292.312	Mo	10	300	-	3289.38	Eu	2	-	-
3295.29	Kr	-	[3 h]	Me	3292.265	Ru	12	-	-	3289.38	Ho	10	20	Ex
3295.289	Ce I, II	30	3	-	3292.215	Gd	10	10	-	3289.37	Yb	500 R	1000 R	-
3295.231	U	3	2	-	3292.124	Cu II	-	5	Sh	3289.36	Er	25	8	-
3295.205	Dy	3	1 h	-	3292.11	Cd II	-	[2]	Tk	3289.346	Fe II	-	40	-
3295.181	Mo	3	1	-	3292.099	Ce	2	-	-	3289.34	Dy	2	2 h	-
3295.103	Cu II	-	8	Sh	3292.087	Co I	18	-	-	3289.307	U	4	4	-
3295.09	O II	-	[10]	Mh	3292.075	Ti I	70	40	-	3289.280	Ce	10	-	-
3295.087	Ir I	8	-	-	3292.023	Fe	150	125	-	3289.245	Ru	5	-	-
3295.08	Tb	8	-	Ed	3292.020	Cb	3	100	-	3289.170	Ag	-	5	-
3295.023	Zr II	2	-	-	3291.918	Cb	3	2	-	3289.138	Rh I	150	50	-
3295.000	Th	8	8	-	3291.887	Ta	35	1 h	-	3289.13	Cs I	2	-	Bv
3294.948	Ce	20	-	-	3291.762	Cr	10	200	-	3289.015	Mo	40	30	Me
3294.942	Pr	3	-	-	3291.743	Th	10	12	-	3288.982	V	10	15	-
3294.94	Dy	3	1	-	3291.676	V I	10	4	-	3288.967	Fe	30	15	-
3294.903	Ti I	20	4	-	3291.659	Ru	12	-	-	3288.941	Ce	2	-	-
3294.851	Mo	15	5	-	3291.64	Eu	3	-	-	3288.897	Ti I	2	-	-
3294.831	Re I	30	-	-	3291.595	Mo	8	4	-	3288.858	I II	-	[8]	Ke
3294.812	U	3	2	-	3291.56	Tb	15	8	Ed	3288.837	Os	30	15	-
3294.80	I	-	[2]	Ke	3291.490	Gd	2	-	-	3288.803	Zr II	10	7	-
3294.714	Ta	18	1	-	3291.47	A	-	[5]	Rt	3288.770	Ce	15	-	-
3294.68	Hf II	4	5 h	Me	3291.423	Sm	6	6 h	-	3288.654	Fe	15	6	-
3294.661	Nd	8	2	-	3291.41	Eu	2 h	-	-	3288.650	Pr	12	1	-
3294.661	Dy	2	-	-	3291.410	Ta	1	5	-	3288.635	Dy	5	-	-
3294.606	Ce	3	-	-	3291.36	Th	2 w	2 w	-	3288.575	Ti II	12	20	-
3294.536	Co I	8	-	-	3291.335	U	12	10	-	3288.561	Ce	2	-	-
3294.53	Ca	-	2	Ad	3291.27	Er	5	1	-	3288.56	Cs I	4	-	Bv
3294.53	Th	4	3	-	3291.127	Os	10	5	-	3288.53	Eu	5	-	-
3294.444	U	8	8	-	3291.119	Dy	4	-	-	3288.466	Ta	18	1 h	-
3294.44	La II	2	5	Me	3291.117	Ru I	20	-	-	3288.46	Ho	6	6	Ex
3294.43	Kr	-	[2 h]	Me	3291.1	Br	-	[3]	Bl	3288.433	V I	8	2	-
3294.37	F II	-	[10]	Di	3291.075	Ti I	2	-	-	3288.43	Eu	2	1 h	-
3294.360	Cb	2	100	-	3291.059	Cb	10	100	-	3288.428	Ti II	6	8	-
3294.34	Yb	3	20	-	3291.050	Hf	20	6 h	-	3288.355	I	-	[35]	Ke
3294.278	Rh I	60	25	-	3291.01	Ti II	-	[40]	El	3288.343	Ce	2	-	Ed
3294.239	Th	5	5	-	3291.00	Tb	8	-	Ed	3288.32	Tb	8	-	-
3294.110	Ru I	60	200	-	3291.00	Tm	125	80	Me	3288.311	V	1	30	-
3294.098	Co I	3	-	-	3290.99	Cr	30 Wh	-	-	3288.209	U	25	20	-
3294.086	Gd	2	-	-	3290.989	Fe I	125	80	-	3288.199	Ce	3	-	-
3294.04	Tb	50	3	Ed	3290.988	Mn	10	-	-	3288.15	S	-	[8]	Bl
3293.95	A	-	[5]	Rt	3290.96	Ho	8	6	Ex	3288.147	Ce	12	-	-
3293.945	Ce	3	-	-	3290.896	Ir	2 h	-	-	3288.142	Ti I, II	10	6	-
3293.944	U	2	1	-	3290.823	Mo	40	100	-	3288.1	bh Sr	4	-	L
3293.943	Th	10	10	-	3290.719	Fe	15	7	-	3288.039	Rh I	1 h	-	-
3293.930	Ta	70	10	-	3290.65	K II	-	[10 h]	Bn	3288.00	Se	1	5	Sd
3293.861	Co I	40 R	-	-	3290.643	Nd	10	6	-	3287.96	Ti	-	[15]	Bl
3293.844	Mo	4	1	-	3290.639	Sm	10	5	-	3287.96	Er	10 s	2	-
3293.83	Cr	30	1	-	3290.60	Yt	3 d	2	-	3287.953	Dy	5	2	-
3293.82	Dy	9	1	-	3290.59	Th	-	40 h	-	3287.920	Cb	5	5	-
3293.820	Nd	12	4	-	3290.577	Ce	10	1	-	3287.884	Ce	10	-	-
3293.797	Sm II	4	1	-	3290.544	Cu I	25	25	-	3287.855	U	2	1	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3287.827	Co I	5	-	-	-	3285.415	Fe II	60	40	-	-	3282.777	Nd	8	2	-	-
3287.790	Ce	6	-	-	-	3285.359	Mo	20	10	-	-	3282.732	Zr I	10	-	-	-
3287.737	Th	12	15	-	-	3285.34	Ca	3	5	-	-	3282.716	Cu I	25	15 W	-	-
3287.69	Kr II	-	[2 wh]	-	Me	3285.29	Te	-	[5]	-	Bl	3282.696	Ni I	100	-	-	-
3287.676	Fe	1	-	-	-	3285.259	Sm II	6	1	-	-	3282.67	Te	-	[10]	-	Bl
3287.655	Ti II	40	200	-	-	3285.254	Ti I	7	-	-	-	3282.610	Th	7	12	-	-
3287.593	Cb	25	2	-	-	3285.224	Ce II	35	5	-	-	3282.542	U	10	6	-	-
3287.589	Ir I	12	1	-	-	3285.223	U	12	10	-	-	3282.533	V	12	80	-	-
3287.571	Co I	18	2	-	-	3285.20	Fe	4	2	-	-	3282.525	Ag I	3	1 h	-	-
3287.57	O II	-	[70 I]	-	Mh	3285.190	Zr I	4	-	-	-	3282.522	Eu	3 W	2	-	-
3287.55	Tb	30	8	-	Ed	3285.104	Co	6 h	-	-	-	3282.51	Yt II	3	5	-	Me
3287.51	Eu	4	4	-	-	3285.093	Nd	10	4	-	-	3282.481	Mo	2	8	-	-
3287.448	U	6	8	-	-	3285.052	Ti I	4	-	-	-	3282.44	Fe	2	1	-	-
3287.41	Nd	6	2 h	-	-	3285.04	Tb	30	8	-	Ed	3282.360	U	2	-	-	-
3287.4	bh Ca	8	-	-	L	3285.024	V	4	40	-	-	3282.333	Zn I	500 R	300	1 Hz	-
3287.399	Ce	10	-	-	-	3285.024	Mo	15	5	-	-	3282.329	Ti II	30	150	-	-
3287.383	Mo	20	4	-	-	3284.932	Ru I	30	5	-	-	3282.327	Ir I	2	2	-	-
3287.38	Kr II	-	[2 h]	-	Me	3284.713	Zr II	25	30	-	-	3282.319	Ce	2	-	-	-
3287.304	Zr II	4	2	-	-	3284.68	S	-	[15]	-	Bl	3282.297	Pr	6	1	-	-
3287.265	Ta	50	-	-	-	3284.622	Mo	-	40	-	-	3282.257	Gd	5 r	5	-	-
3287.249	Pd I	300 w	25	-	-	3284.612	Ta	18	-	-	-	3282.232	Co I	3	-	-	-
3287.221	Ni I	3	-	-	-	3284.606	Ce	8	-	-	-	3282.1	Ca	-	[3]	-	Ba
3287.202	Mo	1	25	-	-	3284.59	Tb	8	-	-	Ed	3282.08	Kr II	-	[15 h]	-	Me
3287.194	Co I	60	-	-	-	3284.588	Fe I	200	125	-	S	3282.041	Co I	4	-	-	Dn
3287.15	Sb	1 h	2 h	-	-	3284.568	Ir I	3	1	-	-	3282.01	B	4	12	-	Sy
3287.134	Re	20 h	-	-	-	3284.560	Mo	3	-	-	-	3281.996	Ce	3	-	-	-
3287.113	Fe	5	3	-	-	3284.537	Os	6	1	-	-	3281.98	Ho	12	15	-	Ex
3287.058	Ir I	12	1	-	-	3284.421	Ce	8	-	-	-	3281.969	Pt I	10	3	-	-
3286.97	Yb	7	30	-	-	3284.395	Eu	4	-	-	-	3281.951	Ce	3	-	-	-
3286.946	Ni I	100	1	-	-	3284.37	Dy	2	1	-	-	3281.939	W	12	10	-	-
3286.834	Al	-	2	-	Gn	3284.368	U	6	2	-	-	3281.92	Tb	8	-	-	Ed
3286.828	Ce	4	-	-	-	3284.360	V I	25	5	-	-	3281.899	Ir I	3	-	-	-
3286.756	Ti II	10	10	-	-	3284.340	Ni	2	-	-	-	3281.880	Ni I	20	-	-	-
3286.755	Ba	1	7	-	-	3284.218	Ce II	20	-	-	-	3281.873	Zr I	2 h	-	-	-
3286.755	Fe I	500	400	-	S	3284.10	Th	-	8 h	-	-	3281.766	Sm	3	-	-	-
3286.754	Er	12	2	-	-	3283.95	La II	3	4	-	Me	3281.754	V	-	30	-	-
3286.71	Yt II	4	2 h	-	m	3283.950	Ti I	6	-	-	-	3281.74	Lu	60	5	-	Me
3286.676	Ce	4	-	-	-	3283.888	Ce	3	-	-	-	3281.735	Ba I	8	-	-	Sz
3286.674	Os	30	5	-	-	3283.885	Sm	5 h	2 h	-	-	3281.72	A	-	[15]	-	Rt
3286.607	Nd	6	2	-	-	3283.82	Cd	-	[12]	-	Es	3281.701	Rh I	5	1	-	-
3286.577	Th	10	12	-	-	3283.81	Tb	8	3	-	Ed	3281.696	Cu II	-	5	-	Sh
3286.573	Dy	2	-	-	-	3283.807	Ta	3	2 wh	-	-	3281.652	U	2	-	-	-
3286.561	W II	5	12	-	-	3283.777	Co I	60 W	-	-	-	3281.64	Si	-	3	-	Sy
3286.545	Co I	3	-	-	-	3283.75	U	2 d	2 d	-	-	3281.617	Mo	-	20	-	-
3286.528	Sm II	10	3	-	-	3283.740	Sm	5 h	-	-	-	3281.611	Gd	5	5	-	-
3286.47	Rb	-	[60]	-	Ok	3283.706	Eu	2	5	-	-	3281.588	Co I	7	-	-	-
3286.446	Fe	5 h	3 h	-	-	3283.69	Si	-	2	-	Sy	3281.587	Ce	3	-	-	-
3286.437	U	2	3	-	-	3283.680	Ce II	25	1	-	-	3281.549	U	5	1	-	-
3286.430	Ta	3	1 h	-	-	3283.586	Ir I	20 Rh	-	-	-	3281.50	Ba I	25	-	-	Sd
3286.396	Rh I	5	-	-	-	3283.573	Rh I	150	-	-	-	3281.49	Rb II	-	[20]	-	Ok
3286.375	Ce	8	-	-	-	3283.556	W	9	8	-	-	3281.487	Nd	4	6	-	-
3286.36	Cr	20	1	-	-	3283.543	Cd II	-	2	-	-	3281.48	Ca	1 h	4	-	Ad
3286.333	Cb	1	20	-	-	3283.543	Fe	7	3	-	-	3281.415	Th	8	10	-	-
3286.251	U	3	2	-	-	3283.537	U	3	-	-	-	3281.40	Tb	50	15	-	Ed
3286.223	Sm II	40	10	-	-	3283.51	Sn II	-	100 h	-	-	3281.345	Mo	5	1	-	-
3286.216	Ce	5	-	-	-	3283.463	Cb	2	100	-	-	3281.300	Fe II	15	100	-	-
3286.18	Er	10	2	-	-	3283.462	Co I	80	-	-	-	3281.283	Th	4	5	-	-
3286.067	Ca I	30	2	-	IWg	3283.427	Fe I	4	2	-	-	3281.26	Xe II	-	[8 h]	-	Hu
3286.029	Ce I, II	18	1	-	-	3283.40	Tm	40	40	-	Me	3281.17	Ho	-	4 h	-	Ex
3286.022	Fe I	30	15	-	-	3283.39	Yb	12	-	-	-	3281.115	V	3	50	-	-
3285.996	Mo	4	1	-	-	3283.384	Hf II	10	6	-	-	3281.115	U	2	1	-	-
3285.98	Cd	-	[12]	-	Es	3283.365	Mo	5	1	-	-	3281.095	Ce	18	-	-	-
3285.920	U	3	2	-	-	3283.354	Ce	20 s	1	-	-	3281.068	Mo	25	3	-	-
3285.910	Ru	4	-	-	-	3283.329	Co I	7	-	-	-	3281.034	Th	2	5	-	-
3285.902	Eu	20	-	-	-	3283.32	Ca	-	2	-	Ad	3280.915	Os	5	-	-	-
3285.883	Zr II	10	8	-	-	3283.32	Cl	-	[10]	-	Jv	3280.913	Yt II	8	12	-	-
3285.874	Co	5	-	-	-	3283.312	Pt I	8	3	-	-	3280.877	Mo	-	25	-	-
3285.87	A	-	[10]	-	Rt	3283.311	V I	35	10	-	-	3280.872	Ta	3	2	-	-
3285.849	Pr	12	2	-	-	3283.21	Sn II	-	[50]	-	Mc	3280.842	Sm	20	6	-	-
3285.81	Ca	-	2	-	Ad	3283.21	Yt	3	4	-	-	3280.756	Mn	60	30	-	-
3285.80	In	-	3 wh	-	-	3283.209	Pt	8	-	-	-	3280.748	Zr II	3	2	-	-
3285.786	Ce	3 w	-	-	-	3283.20	P	-	[15]	-	Gu	3280.736	Th	2 d	2 d	-	-
3285.762	Zr II	4	3	-	-	3283.175	Ce	3	-	-	-	3280.692	U	-	3	-	-
3285.752	Th	8	1	-	-	3283.121	Pr	15	2	-	-	3280.685	Cu	10	2	-	-
3285.748	Na II	40	[100]	-	-	3283.104	U	6	4	-	-	3280.683	Ag I	2000 R	1000 R	-	-
3285.70	Cb	-	10 w	-	-	3283.10	Tb	30	8	-	Ed	3280.682	Eu	1000 R	-	-	-
3285.670	V	-	3	-	Me	3283.07	Ho	-	4 h	-	Ex	3280.681	Co	2	-	-	-
3285.659	Cb	5	5	-	-	3283.06	Cr	-	35	-	-	3280.678	Pd	-	2 h	-	-
3285.657	Sm II	25	7	-	-	3282.969	Th	8	12	-	-	3280.671	Mo	3	-	-	-
3285.654	Re	25	-	-	-	3282.909	Mo	1	30	-	-	3280.668	Ce	6	-	-	-
3285.61	Tm	40	40	-	Me	3282.892	Fe	80	80	-	-	3280.608	U	1	2	-	-
3285.607	Mo	1	4	-	-	3282.890	Be I	8	-	-	-	3280.60	Cl	-	[8]	-	Jv
3285.60	Er	15	2	-	-	3282.834	Zr II	10	10	-	-	3280.55	Rh I	30 R	10	-	-
3285.60	Yb	7	-	-	-	3282.827	Ni I	25	1	-	-	3280.50	Lu	10	-	-	Me
3285.589	U	5	2	-	-	3282.79	Dy	2	1	-	-	3280.485	Ce II	15	1	-	-

3280.4—3272.0 Å.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3280.48	Xe	-	[4]	Hu	3277.698	Er	12	2	-	3274.628	Mo	-	30	-
3280.399	U	5	1	-	3277.672	Cb	3	5	-	3274.616	Ce	8	-	-
3280.391	Ti I	3	-	-	3277.664	Co I	18	-	-	3274.576	Pr	8	-	-
3280.374	Th	10	12	-	3277.66	O II	-	[25 I]	Mh	3274.561	Ir I	4	-	-
3280.318	Mo	5	5	-	3277.636	Zr	3	-	-	3274.458	Ta	35	1	-
3280.28	Tb	30	15	Ed	3277.567	Ru	30	12	-	3274.453	Fe	80	60	-
3280.261	Fe	150	150	I	3277.511	U	2	2	-	3274.410	Ag	-	5 h	Fn
3280.22	Er	12	3	-	3277.50	Te	-	[15]	Bl	3274.399	Th	6	3	-
3280.218	Sm	4	-	Kn	3277.444	V	2	15	-	3274.29	Eu	3	1 h	-
3280.202	Nd	2 h	4 h	-	3277.366	Zr I	4	-	-	3274.24	Tb	70	-	Ed
3280.20	P	-	[30 h]	Gu	3277.346	Fe II	40	200	-	3274.220	Na II	15	[40]	Fr
3280.10	Dy	70	5	-	3277.32	Tb	15	8	Ed	3274.204	Mo	-	5 h	-
3280.004	U	8	8	-	3277.318	Co I	60 W	-	-	3274.112	Ce	8	-	-
3279.995	Ti II	10	40	-	3277.310	Cu I	7	2	-	3274.064	Ce	10	-	-
3279.98	Hf II	25	25	Me	3277.283	Ir I	8	1	-	3274.047	Ti I	7	1	-
3279.98	Yb	5	-	-	3277.168	Mo	4	2	-	3274.02	In II	-	15	Sq
3279.974	Cb	-	5	-	3277.16	Ho	-	4 h	Ex	3273.97	Sb	-	4	Sp
3279.923	Gd	2	-	-	3277.143	Ce	5	-	-	3273.964	Ce	5	-	-
3279.85	Pb II	-	10	Gs	3277.085	V	1	10	-	3273.962	Cu I	3000 R	1500 R	-
3279.845	V	20	8	-	3277.056	Th	3	-	-	3273.961	Mo	20	-	-
3279.842	Ce I, II	30	5	-	3276.998	Ti II	5	5	-	3273.958	Ca	2	4	-
3279.826	Cb	4	-	-	3276.966	Ce	2	-	-	3273.931	Co	10	-	-
3279.816	Cu I	25	30	-	3276.81	Tm	40	15	Me	3273.926	Ce	5	-	-
3279.739	Fe	7	3	-	3276.81	Cl II	-	[40]	Ks	3273.886	Cb	20 r	100 W	-
3279.653	Fe	-	2	-	3276.8	Cd	-	[12]	Es	3273.884	Th	10	15	-
3279.582	W	5	6	-	3276.80	Yb	10	-	-	3273.68	Au II	-	2	-
3279.550	U	12	5	-	3276.774	Ti II	12	70	-	3273.655	Hf II	20	10	-
3279.527	Gd	5	8	-	3276.765	U	10	-	-	3273.621	Ru	2	5	-
3279.52	Eu	10	-	Kn	3276.743	Sm II	50	10	-	3273.619	Sc I	35	12	-
3279.46	I	-	[10]	Bl	3276.667	Pr	10	2	-	3273.596	U	5	-	-
3279.442	Mo	15	3	-	3276.606	Fe II	-	10	-	3273.582	Mo	-	25	-
3279.33	Pb	-	10	Sx	3276.55	Zn II	-	[3]	Vs	3273.54	O II	-	[35 I]	Mh
3279.32	Er	20	5	-	3276.54	I II	-	[2]	Ke	3273.516	Ce	4	-	-
3279.292	Ta	50 r	3	-	3276.480	Co I	35	2	-	3273.509	Cb	1	20	-
3279.265	Zr II	50	50	-	3276.470	Cb	-	5	-	3273.499	Fe II	-	6	-
3279.26	Ho	8	10	Ex	3276.468	Fe I	100	50	-	3273.477	Sm	30	8	-
3279.256	Co I	60	-	-	3276.44	Pb	-	5 h	Kl	3273.45	I	-	[3]	Ke
3279.25	A I	-	[3]	Ms	3276.411	Os	3	1	-	3273.384	Os	15	5	-
3279.250	Cb	-	10	-	3276.366	Zr II	2 h	-	-	3273.36	A	-	[5]	Rt
3279.224	U	3	1	-	3276.360	Ce	6	-	-	3273.325	Er	7	-	-
3279.205	Ce	2	-	-	3276.336	Mo	2	40	-	3273.316	Sm II	6	3	-
3279.149	Fe	2	1	-	3276.251	Ce	18	1	-	3273.225	U	2	2	-
3279.096	U	6	4	-	3276.19	Pb	-	60	Sx	3273.173	Nd	8	2	-
3279.04	Tb	8	3	Ed	3276.167	Ir I	2	-	-	3273.132	Ta	70	3 h	-
3279.028	Pr	7	-	-	3276.16	Th	3 d	8	-	3273.12	Tb	15	-	Ed
3279.027	W	8	5	-	3276.158	U	8	1 h	-	3273.08	Er	25	15	-
3279.009	Ce	18	3	-	3276.132	Nd	12	2	-	3273.078	Ru I	60	20	-
3278.989	Ti II	-	2	-	3276.124	V II	50	200 R	-	3273.058	Pt II	-	5	-
3278.97	Lu	50	5	Me	3276.10	Si	-	2	Sy	3273.047	Zr II	50	80	-
3278.96	Yb	12	-	-	3276.076	Mo	8	1	-	3273.027	V I	30	5	-
3278.96	Se II	-	[20]	Kh	3275.986	Rh I	4	-	-	3273.023	U	5	1 h	-
3278.93	A I	-	[3]	Ms	3275.954	Cb	2	2	-	3273.015	Mn	20	20	-
3278.922	Ti II	40	150	-	3275.941	Ta	50	1 h	-	3272.947	Ce	3	-	-
3278.91	Zr II	-	5	-	3275.866	Sm II	10	3	-	3272.91	Xe II	-	[30]	Hu
3278.881	Mo	1	50	-	3275.842	Nd	10	4	-	3272.898	Mo	4	1	-
3278.874	Sm	6	2	-	3275.81	Yb	12	100	-	3272.897	Pr	10	1	-
3278.844	Co I	70	2	-	3275.776	Al II	-	[18]	Sy	3272.89	Cr	-	4	-
3278.839	Pr	9	2	-	3275.68	Cs	-	[4]	Bs	3272.803	Sm II	20	9	-
3278.77	Te	-	[10]	Bl	3275.679	Ta	70	35	-	3272.76	Eu	20	3	-
3278.734	Fe	100	60	-	3275.66	Tb	8	3	Ed	3272.73	Dy	6	-	-
3278.655	Mo	4	1	-	3275.645	Zr II	2 h	-	-	3272.725	Ce	10	-	-
3278.561	Zr I	2 h	-	-	3275.603	Ir I	3	-	-	3272.70	Fe	2	-	-
3278.553	Mn	60	30	-	3275.6	Sb	-	2	Sp	3272.64	Yb	3	-	-
3278.483	U	6	2	-	3275.572	Yt	10	8	-	3272.636	Ta	3	-	-
3278.433	Yt	4	2	-	3275.567	Ce	2 w	-	-	3272.606	Ce	8	-	-
3278.317	Ta	2	-	-	3275.442	Er	15	2	-	3272.595	Fe	6	3	-
3278.290	Ti II	25	100	-	3275.293	Ti II	8	50	-	3272.589	Sm	10	4	-
3278.26	Cs	-	[4]	Bs	3275.218	Nd	15	8	-	3272.56	Pd II	-	60 h	Ex
3278.222	Er	15	3	-	3275.201	Os	200	15	-	3272.479	Os	20	1	-
3278.15	Ho	10	15	Ex	3275.20	Ne II	-	[4]	Bn	3272.469	Sm	10	4	-
3278.107	Co I	8	-	-	3275.142	Zr II	3	1	-	3272.405	Ba	3	-	Kn
3278.066	Mn	10	-	-	3275.115	I	-	[25]	Ke	3272.405	Co I	3	-	-
3278.05	Pd II	-	2 h	Bx	3275.035	U	2	1	-	3272.382	Mo	-	25	-
3277.989	Ce	2	-	-	3275.031	Ir	2 h	-	-	3272.36	Er	5	-	-
3277.966	Os	80	8	-	3275.010	Th	10	12	-	3272.35	Tb	15	3	Ed
3277.939	V I	20	-	-	3274.947	Ta	200	35 W	-	3272.349	Cb	-	10 wh	-
3277.934	Ce	8	-	-	3274.94	Xe	-	[2 wh]	Hu	3272.253	Cb	40	15	-
3277.87	Hg II	-	[50]	Ps	3274.90	Ni II	-	5	Me	3272.224	Ce	1	10	-
3277.833	Ti I	2	-	-	3274.864	Ce	35	8	-	3272.222	Zr II	15	10	-
3277.83	La II	2 h	3 h	Me	3274.788	Cb	1	10	-	3272.192	V I	8	1	-
3277.80	P	-	[30]	Gu	3274.778	Rh	2	-	-	3272.104	Os	40	10	-
3277.78	Eu	20	3	-	3274.747	Er	10	1	-	3272.10	Er	12	1	-
3277.73	Tb	15	3	Ed	3274.706	Ru I	60	25	-	3272.080	Ti II	25	100	-
3277.728	U	6	-	-	3274.661	Ca I	20	-	Cw	3272.073	Dy	2	1	-
3277.721	Re	15	-	-	3274.640	Be II	-	[50]	Ps	3272.070	Cb	12	2	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3272.064	Ce	8	-	-	-	3269.39	Sm	-	15	-	-	3266.95	Si	-	2	-	Sy
3272.026	Th	3	1	-	-	3269.235	Fe	20	6	-	-	3266.940	U	12	1	-	-
3271.984	Ir	6	-	-	-	3269.229	U	2	1	-	-	3266.930	Fe II	-	15	-	-
3271.984	Os	15	8	-	-	3269.209	Os	200	20	-	-	3266.890	Ta	35 r	1 h	-	-
3271.978	Cb	4	2	-	-	3269.140	Ta	70 r	7 l	-	-	3266.887	Mo	-	40	-	-
3271.961	Ce	5	-	-	-	3269.129	Ce	10	-	-	-	3266.865	Ce	3	-	-	-
3271.96	Cr	60 wh	-	-	-	3269.12	Dy	20	3	-	-	3266.850	Re I	30	-	-	-
3271.807	Ir I	10	1	-	-	3269.117	Cb	2	10	-	-	3266.84	I	-	[5]	-	Ke
3271.783	Co I	60	-	-	-	3269.101	Ca I	10	2	-	-	3266.763	W	7	6	-	-
3271.683	Gd	2	-	-	-	3269.05	A II	-	[5]	-	Rt	3266.747	Os	10	5	-	-
3271.683	Ca	1 h	3	-	-	3269.037	Re	30	-	-	-	3266.733	Gd	3	-	-	-
3271.683	Fe I	25	15	-	-	3269.007	U	3	2	-	-	3266.635	Th	8	3	-	-
3271.666	Mo	-	60	-	-	3269.00	Tm	40	-	150	Me	3266.634	Cr I	35	4	-	-
3271.652	Ti II	35	125	-	-	3268.979	Mo	-	25	-	-	3266.63	Tm	70	50	-	Me
3271.637	V I	25	-	-	-	3268.971	Ni I	2	-	-	-	3266.63	Yb	4	-	-	-
3271.626	Cs II	-	[20]	-	Ot	3268.943	Ru	4	-	-	-	3266.622	W	7	5	-	-
3271.612	Rh I	200	60	-	-	3268.923	W	9	10 s	-	-	3266.53	Hf II	1	3	-	Me
3271.56	Cb	-	3 wh	-	-	3268.897	Re I	30	-	-	-	3266.445	Ru I	50	9	-	-
3271.550	Ce	25	1	-	-	3268.888	Co	4	-	-	-	3266.444	Ir I	50	10	-	-
3271.54	Yb	6	10	-	-	3268.84	Te	-	[15]	-	Bl	3266.412	Cb	2	4 h	-	-
3271.486	Fe	15	7	-	-	3268.80	Er	12	1	-	-	3266.40	Tb	30	15	-	Ed
3271.454	U	6	5	-	-	3268.794	Ru	4	60	-	-	3266.39	Eu	20	20	-	-
3271.445	Ir I	2	-	-	-	3268.722	Mn	30	30	-	-	3266.289	Mo	6	3	-	-
3271.411	V I	8	-	-	-	3268.66	Eu	6 W	-	-	Kn	3266.211	U	3	3	-	-
3271.235	Ir I	10	1	-	-	3268.649	U	2	-	-	-	3266.207	Dy	12	5	-	-
3271.225	Sm	6	2	-	-	3268.61	Ti I	4	-	-	-	3266.164	Mo	6	5	-	-
3271.188	Ta	70 wh	18 w	-	-	3268.580	W	8	9	-	-	3266.12	Cb	-	5	-	-
3271.18	Yb	10	20	-	-	3268.52	Tb	15	3	-	Ed	3266.089	Ce	3	-	-	-
3271.16	A I	-	[10]	-	Ms	3268.509	Fe II	-	5	-	-	3266.085	V I	12	-	-	-
3271.151	Ce II	18	2	-	-	3268.479	Re I	40	-	-	-	3266.08	Xe	-	[4 wh]	-	Hu
3271.127	Zr II	8	8	-	-	3268.474	Rh I	25	5	-	-	3266.023	Cu I	20	15	-	-
3271.125	V II	25	50 R	-	-	3268.462	U	3	-	-	-	3266.004	Cb	3 w	-	-	-
3271.118	Ni I	125	1	-	-	3268.424	Pt	15	4	-	-	3266.00	Dy	9	5	-	-
3271.112	U	6	-	-	-	3268.341	Gd	4	2	-	-	3265.93	Tb	8	3	-	Ed
3271.089	Re	3	-	-	-	3268.33	Rb	-	[2]	-	Ok	3265.924	Cs II	-	[30]	-	Ot
3271.03	Rb II	-	[40]	-	Ok	3268.314	Cs	-	[10]	-	Sv	3265.899	V I	15	12	-	-
3271.002	Fe I	300	300	-	S	3268.278	Cu I	15	10	-	Hs	3265.828	Ce	10	-	-	-
3270.96	O II	-	[25 l]	-	Mh	3268.236	Fe I	125	100	-	-	3265.806	U	25	18	-	-
3270.904	Mo	50	25	-	-	3268.233	Pr	10	1	-	-	3265.78	Eu	20	-	-	Kn
3270.851	Os	15 h	4	-	-	3268.208	Ru I	60	12	-	-	3265.679	Ce	5	-	-	-
3270.841	Ca	1 h	2	-	-	3268.193	Mo	6	2	-	-	3265.67	La II	300	200	-	Me
3270.816	Th	8	5	-	-	3268.123	W	5	3	-	-	3265.62	Lu	2	-	-	Me
3270.79	Ne II	-	[4]	-	Bl	3268.10	Tb	30	8	-	Ed	3265.619	Fe I	300	300	-	-
3270.761	Cb	5	8	-	-	3268.079	Re	40	-	-	-	3265.568	Ce	8	-	-	-
3270.75	Yb	25 d	-	-	-	3268.064	Ni	5	-	-	-	3265.480	Ti I	6	1	-	-
3270.72	Cr	50	1	-	-	3268.05	Se	-	[20]	-	Bl	3265.423	Ce	15	1	-	-
3270.686	Ce	5	-	-	-	3268.022	Ce	2	-	-	-	3265.373	Nd	10	2	-	-
3270.672	Sm	10	4	-	-	3267.97	Bi I	2 h	-	-	To	3265.352	Co I	35	2	-	-
3270.63	Tb	15	3	-	Ed	3267.945	Os I	400 R	30	-	-	3265.345	Ta	35	-	-	-
3270.590	Zr	4	-	-	-	3267.89	Yb	6	-	-	-	3265.34	Ca	1	2	-	-
3270.576	Rh I	3	-	-	-	3267.794	Mn	40	40	-	-	3265.310	Cb	2	2	-	-
3270.562	Ti I	10	1	-	-	3267.764	Dy	2	-	-	-	3265.292	Hf	10	1	-	-
3270.502	Ca	1	2	-	-	3267.702	V II	30	80 R	-	-	3265.2	air	-	5	-	m
3270.483	Sm	10	4	-	-	3267.677	Cb	10	10	-	-	3265.150	W	9	8	-	-
3270.467	Cb	15	10	-	-	3267.64	Gd	2	-	-	-	3265.145	Ce	2	-	-	-
3270.44	Cs I	2	-	-	Bv	3267.639	Mo	4	30	-	-	3265.139	Mo	25	25	-	-
3270.43	P	-	[15]	-	Gu	3267.638	U	8	2	-	-	3265.124	Nd	10	4	-	-
3270.351	Mn	30	30	-	-	3267.56	Ta	5 h	-	-	-	3265.048	Fe I	200	150	-	-
3270.263	W	9	4	-	-	3267.510	Sm	2	-	-	-	3265.00	Lu	-	10 hl	-	Me
3270.242	Ru	3	-	-	-	3267.502	Sb I	150	150 Wh	-	-	3264.938	Sm II	25	8	-	-
3270.23	Th	2 d	5	-	-	3267.48	Rh	2	15	-	-	3264.90	Tb	15	3	-	Ed
3270.22	Te	-	[5]	-	Bl	3267.45	W	-	12	-	-	3264.85	Rb	-	[20]	-	Ok
3270.198	Co I	10	-	-	-	3267.41	Ti I	2	-	-	-	3264.843	Co I	35	2	-	-
3270.133	Ce	12	-	-	-	3267.41	Tm	50	40	-	Me	3264.812	Zr II	4	4	-	-
3270.124	U	20	25	-	-	3267.362	Zr I	3	-	-	-	3264.781	Er	25	5	-	-
3270.116	V	3	5	-	-	3267.35	Ag	-	12	-	-	3264.781	Yt	10	8	-	-
3270.108	Ba	4	-	-	Sz	3267.35	Pd II	-	200 h	-	-	3264.77	Ho	6	8	-	Ex
3270.048	Re	5 h	-	-	-	3267.34	Xe II	-	[4]	-	Hu	3264.718	Co I	7 h	-	-	Dn
3269.959	Fe	5	3	-	-	3267.31	La II	2	3	-	Me	3264.711	Mn	75	50	-	-
3269.904	Sc I	30	12	-	-	3267.251	Nd	10	4	-	-	3264.711	Ce	2	-	-	-
3269.887	Os	8	2	-	-	3267.244	U	8	6	-	-	3264.710	Fe I	4	2	-	-
3269.86	Ne II	-	[7]	-	Bn	3267.237	Ce II	12	-	-	-	3264.686	Os	100 h	10	-	-
3269.819	Ag II	-	10	-	-	3267.200	Os	20	15	-	-	3264.663	Ru I	30	6	-	-
3269.779	U	10	6	-	-	3267.175	Hf	10	1	-	-	3264.620	Pr	6	1 h	-	-
3269.772	Fe II	-	4	-	-	3267.15	Er	4	4	-	-	3264.592	Cb	15	10	-	-
3269.765	Cr	-	35	-	-	3267.135	Cs II	-	[30]	-	Ot	3264.550	Ru I	30	5	-	-
3269.66	Eu	4 wh	-	-	-	3267.100	Ir I	2	-	-	-	3264.513	Fe I	80	60	-	-
3269.657	Zr I	12	1	-	-	3267.08	Au	10	8	-	-	3264.437	Th	6	6	-	-
3269.628	W	10 l	12	-	-	3267.067	Ti I	10	-	-	-	3264.404	Mo	25	20	-	-
3269.527	Dy	2	1	-	-	3267.05	Xe	-	[3]	-	Hu	3264.4	Cd	-	[10]	-	Es
3269.494	Ge I	300	300	-	-	3267.050	Cb	5	5	-	-	3264.341	W	7	6	-	-
3269.469	Th	10	10	-	-	3267.036	Fe II	-	4	-	-	3264.33	Kr II	-	[5 wh]	-	Me
3269.458	U	2	2	-	-	3267.01	Eu	4 wh	2	-	Kn	3264.31	Pr	10	-	-	-
3269.414	Eu	2	1 h	-	-	3267.009	Hf	8	-	-	-	3264.29	A I	-	[3]	-	Ms
3269.411	Er	18	4	-	-	3267.002	Th	10	12	-	-	3264.290	Dy	3	-	-	-

3264.2—3256.4 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
3264.264	Cr	6	50	3261.74	Tb	15	3	3259.36	Xe II	—	[6]
3264.260	Cb	2 h	1 h	3261.73	Pd	—	2 h	3259.251	Th	5	6
3264.190	Ag	1	3 h	3261.718	U	15	10	3259.231	Nd	10	4
3264.16	F II	—	[30]	3261.70	Yb	—	5	3259.18	Cl	—	[8]
3264.142	Sm	6	3	3261.695	Cb	1	50	3259.17	Ho	—	6
3264.125	Th	5	6	3261.692	Pt	8	2	3259.161	Mo	5	4
3264.10	Tm	30	10	3261.66	Tm	30	100	3259.138	Cb	3	3
3264.09	Ca	1	3	3261.633	Ce	2	2 h	3259.103	Yb	2	8
3264.083	Ta	35	1	3261.605	Ti II	70	300 r	3259.060	Th	6	1
3264.06	Hg II	—	[200]	3261.60	S	—	[8]	3259.048	Er	18 d	6 d
3264.041	In II	—	[5]	3261.59	Eu	2 h	—	3259.048	Fe II	1	200
3264.005	In II	—	[10]	3261.58	Kr II	—	[8 h]	3258.967	Ru	10	60
3263.99	La II	3	4	3261.554	Re	50	—	3258.948	U	3	1
3263.89	Tb	30	8	3261.544	Th	8	10	3258.94	Pr	10	1
3263.884	Ce II	25	3	3261.524	Ce	2	—	3258.874	Ce	25	1
3263.853	Ru	30	3	3261.511	Ta	—	35 h	3258.850	Re I	100	—
3263.845	Ti I	2	6	3261.509	Yb	5	18	3258.81	K II	—	[10]
3263.832	Mo	15	15	3261.333	Fe	25	7	3258.8	Ho	—	4 h
3263.821	Rh	2	—	3261.33	Nd	—	4 h	3258.780	Pd I	300	200 h
3263.78	A I	—	[3]	3261.242	Ce II	8	—	3258.773	Fe II	—	150
3263.759	Ta	70	2	3261.22	Dy	5	2	3258.77	Cr	—	50
3263.747	U	2	3	3261.21	Pb	—	2	3258.687	Mo	1	25
3263.70	Eu	3	—	3261.165	W	10	8	3258.668	Eu	2 h	2 h
3263.686	Ti II	10	70	3261.129	Ru	30	3	3258.62	Tm	10	5
3263.639	Th	4	3	3261.116	Ce	2	—	3258.564	In I	500 R	300 R
3263.60	A	—	[10]	3261.11	Th	5	4	3258.484	Er	10	2
3263.50	Eu	6 w	4	3261.081	V	15	10	3258.47	Ho	—	4 h
3263.445	Ce	18	3	3261.078	Zr I	2 h	—	3258.45	Si	—	2 h
3263.43	Ne II	—	[7]	3261.072	Pt I	3	—	3258.413	Mn	75	40
3263.404	Ta	—	35 h	3261.057	Cd I	300	300	3258.38	Tb	8	3
3263.369	Fe I	30	15	3261.0	air	—	8	3258.306	Pr	4	—
3263.366	Cb	3	500	3261.0	Pb II	—	[50]	3258.275	He I	—	[5]
3263.339	Ce	8	—	3260.998	Ir I	2 h	—	3258.255	Sm II	9	3
3263.321	V II	—	50	3260.975	Ce II	25	3	3258.24	Ta	10	2 h
3263.309	Ir I	3	1 h	3260.93	Ca	1 h	3	3258.143	W	5	3
3263.238	V I	40	—	3260.922	Th	8	10	3258.110	Th	2 h	2 h
3263.213	Co I	30	—	3260.916	Zr	2 h	—	3258.097	U	3	2
3263.144	Rh I	200	40	3260.883	Eu	5	—	3258.067	Re I	4 w	—
3263.112	U	25	8	3260.83	Tb	15	3	3258.06	Ho	—	4
3263.104	W	8	7	3260.819	Co I	70	4	3258.04	Tm	125	60
3263.071	Ce II	10	—	3260.74	B II	4	10	3258.040	Ru I	50	8
3263.07	Fe	1	—	3260.69	I	—	[10]	3258.025	Co I	60	—
3263.06	Cs	—	[4]	3260.69	Dy	10	2	3257.965	Na II	35	[60]
3263.033	Th	8	8	3260.655	Nd	10	4	3257.935	Th	8	8
3263.02	Eu	2 W	—	3260.64	Se	—	[8]	3257.93	I	—	[5]
3263.001	Ta	20	1	3260.568	Os	15	5	3257.894	Fe II	—	3
3262.97	Tb	30	3	3260.562	Cb	15	300	3257.889	V	6	40
3262.930	Ir I	4	—	3260.535	U	2	1	3257.888	Ir	2	—
3262.80	Er	15	4	3260.484	Mo	10	5	3257.83	S II	—	[10]
3262.765	Re I	25	—	3260.353	Ru I	100	50	3257.822	Cr	40	30
3262.751	Os	100	20	3260.333	Th	2	—	3257.822	Ta	25	2
3262.718	Ir I	3	—	3260.320	Ce	3	—	3257.813	Ce	6	—
3262.68	Tb	8	3	3260.299	Os	60	10	3257.80	W II	—	10
3262.671	Th	12	15	3260.286	Co I	5	—	3257.773	U	1	3
3262.628	Mo	15	4	3260.265	Sm	9	2	3257.710	U	6	—
3262.61	Eu	15	—	3260.261	Fe	20	15	3257.69	Er	2	—
3262.579	Sm	3	1	3260.259	Ti I, II	12	30	3257.594	Fe I	100	100
3262.561	Cb	—	5 h	3260.231	Mn	75	50	3257.59	Hg II	—	[10]
3262.495	Eu	5	2 h	3260.218	Na II	—	[15]	3257.589	Pr	10	—
3262.474	Hf	10	1	3260.182	Ta	125	18 w	3257.58	A I	—	[100]
3262.435	Co	2	—	3260.167	Ru	12	—	3257.39	Ho	6	6
3262.40	Tb	2	—	3260.138	Cb	5	5	3257.369	Th	6	2
3262.39	Pr	2	—	3260.111	Zr I	10	1	3257.361	Dy	4	2 h
3262.36	Nd	10 d	2 h	3260.00	Dy	9	2	3257.240	Fe I	25	12
3262.353	Mo	8	1	3259.994	Fe I	150	100	3257.162	Th	8	8
3262.353	Pb	20 h	5 h	3259.975	Cr	50	30	3257.132	Ce	4	—
3262.328	Sn I	400 h	300 h	3259.870	Ta	50	3	3257.116	Fe	1	—
3262.29	Cs	—	[6]	3259.847	Co	3	—	3257.011	Cb	4	3 h
3262.290	Os I	500 R	—	3259.84	Tb	15	—	3257.0	bh B	100	—
3262.28	W	—	18	3259.840	U	10	3	3256.924	Os	80	12
3262.280	Fe	50	25	3259.784	Ce II	20	—	3256.904	Nd	10	2
3262.275	Ba I	3	3	3259.733	Pt I	3	6	3256.83	Tb	8	—
3262.27	Dy	2	—	3259.71	A	—	[5]	3256.81	Te	—	[35]
3262.263	Sm II	10	4	3259.680	V	—	4	3256.784	Ir I	4	—
3262.188	Mo	1	20	3259.667	Ru I	60	9	3256.777	V I	8	1
3262.15	Rb	—	[30]	3259.662	W	9	9	3256.774	Ta	100	1
3262.138	Ce	5	—	3259.623	Ta	35	3	3256.74	Cb	—	4
3262.062	V I	10	3	3259.618	Th	8	10	3256.728	Mo	4	2
3262.02	Dy	2	1	3259.557	Ce	3	—	3256.70	Ag	—	2 h
3262.02	Xe II	—	[3 h]	3259.549	Re	100	—	3256.698	Fe	20	7
3262.013	Fe	30	15	3259.539	Mo	5	3	3256.682	Ce	20	—
3262.010	Ir I	20	2	3259.537	V I	15	3	3256.67	Kr II	—	[4]
3261.96	Ba I	40	—	3259.438	W	9	9	3256.601	La	3	—
3261.879	Cb	10	3	3259.42	Ti I	2	—	3256.463	I	—	[18]
3261.84	Mo	2	—	3259.38	Tb	15	3	3256.46	V	8	1

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3256.458	U	2	1	-	3253.82	Rb	-	[10]	Ok	3251.07	Cl	-	[5]	Bl
3256.433	Pt	2	-	Sf	3253.80	Ta	15	-	-	3250.974	Nd	4	2 h	-
3256.35	Er	10	2	-	3253.803	I	-	[10]	Ke	3250.95	Tb	8	-	Ed
3256.331	Ru	50	3	-	3253.78	Mo	1 d	50 d	-	3250.949	Na II	-	[15]	Fr
3256.289	Re	8	-	-	3253.702	Hf II	30	30	-	3250.777	V	10	50	-
3256.273	Th	10	15	-	3253.686	Th	5	1	-	3250.747	Mo	2	100	-
3256.27	Ho	-	4	Ex	3253.640	Sm	5	1	-	3250.743	Ni I	125	1	-
3256.251	Ce	12	-	-	3253.602	Fe	100	80	-	3250.627	Fe I	60	40	-
3256.25	Dy	25	5	-	3253.54	Tb	8	3	Ed	3250.58	Cs	-	[6]	Bs
3256.232	Ce	6	-	-	3253.510	Mo	3	-	-	3250.56	Xe II	-	[15]	Hu
3256.230	W	8	7	-	3253.46	S	-	[15]	Bl	3250.469	Cu II	-	5	Sh
3256.210	Mo	40	25	-	3253.42	La II	3	4	-	3250.458	Zr II	6	8	-
3256.137	Mn	75	50	-	3253.390	Sm	40	10	-	3250.394	Fe	20	6	-
3256.133	Cb	-	2 wh	-	3253.37	Ir	2	1	-	3250.392	Zr I	15	-	-
3256.090	In I	1500 R	600 R	-	3253.36	Eu	3	-	-	3250.38	In	-	10	Sq
3255.962	W	9	8	-	3253.351	U	5	2	-	3250.361	Sm II	50	10	-
3255.916	Pt I	3	30	-	3253.343	Rh	2	-	-	3250.358	Ta	70	3	-
3255.890	Fe II	20	100	-	3253.342	Ce	8	-	-	3250.355	Pt	40	8	-
3255.843	Sm	6	2	-	3253.34	Ta	15 d	2 h	-	3250.335	Co I	4	-	-
3255.811	Ca	1 h	3	-	3253.27	Cr	20	1	-	3250.301	Cd	-	25	-
3255.801	Re	4	-	-	3253.195	Pr	5	1	-	3250.3	Rn	-	[2]	Pe
3255.787	Er	10	1	-	3253.185	Re	8 w	-	-	3250.277	U	10	10	-
3255.69	Ta	18 h	2 wh	-	3253.067	Ba	5 h	-	Kn	3250.27	Cb	5 h	100	-
3255.678	Sc I	15	8	-	3253.011	Sm	8	3	-	3250.26	Ca	-	2	-
3255.649	V I	25	5	-	3253.00	Te	-	[5]	Bl	3250.234	Gd	2	4	-
3255.626	U	3	-	-	3252.997	Ru	12	-	-	3250.193	Th	6	5	-
3255.625	Nd	8	4	-	3252.982	Ce	2	-	-	3250.17	Cd II	-	100	-
3255.624	Sm II	8	3	-	3252.948	Mn	75	50	-	3250.07	Hf II	5	-	Me
3255.513	Th	10	10	-	3252.926	Fe	80	50	-	3250.034	Rh I	2	-	-
3255.39	Ne II	-	[4]	Bn	3252.925	Th	5	10	-	3250.034	V I	8	-	-
3255.35	Ca	-	[10]	Bs	3252.914	Ti II	60	200 r	-	3250.033	Ta	25 h	-	-
3255.343	Ga	-	100 Wh	-	3252.907	V	5	-	-	3250.009	Ru	30	3	-
3255.28	Hf II	20	30	Me	3252.905	Ru I	20	-	-	3250.002	Co I	6	-	-
3255.270	Os	10 h	3	-	3252.764	Cb	5	3	-	3249.931	V I	8	-	-
3255.269	Cb	2 h	20	-	3252.75	Ag	-	8 h	-	3249.927	Ru	30	3	-
3255.246	Mo	-	40	-	3252.675	Th	8	10	-	3249.924	Mo	6	3	-
3255.22	Tb	15	3	Ed	3252.642	U	1	2	-	3249.886	Sm II	6	2	-
3255.215	Ce	8	-	-	3252.539	Ru I	12	-	-	3249.860	Th	10	10	-
3255.202	Ir I	2	-	-	3252.525	Cd I	300	300	IMe	3249.85	Fe	1	-	-
3255.068	W	9	12	-	3252.490	Cr	-	25 h	-	3249.84	Tm	10	50	Me
3255.058	Ir I	5	-	-	3252.483	Ce	30	3	-	3249.831	Ce	4	-	-
3254.97	Rh I	10	-	-	3252.437	Fe	90	40	-	3249.82	A	-	[25]	Rt
3254.94	Cr	50 wh	-	-	3252.429	Cb	1	10	-	3249.747	Pr	10	2	-
3254.914	Os	60	12	-	3252.34	Tb	50	30	Ed	3249.732	Sm	25	7	-
3254.880	Cb	1	50	-	3252.33	Mo	-	30	-	3249.730	Ir I	10	3	-
3254.866	Ce	12	-	-	3252.304	U	6	3 h	-	3249.657	Fe II	-	10	-
3254.857	Hf	10	-	-	3252.294	W	10	9 s	-	3249.61	Tb	8	3	Ed
3254.85	Tm	8	10	Me	3252.29	Yt	4	2	-	3249.566	V I	40	30	-
3254.84	W II	-	6	-	3252.257	Re I	40	-	-	3249.534	Hf	20	1	-
3254.817	U	3	2	-	3252.220	Cu I	4	3	-	3249.515	Cb	10	10	-
3254.811	Th	8	10	-	3252.21	Hg II	-	[30]	Ps	3249.508	Ir I	10	10	-
3254.778	Sm II	3	1	-	3252.19	Dy	15	2	-	3249.498	Ce	3	-	-
3254.768	V I	40	80 h	-	3252.05	Tb	8	-	Ed	3249.47	Lu	-	4	Me
3254.734	Fe	15	6	-	3252.01	Os	50	15	-	3249.46	V	-	5 h	Me
3254.728	Sm II	10	3	-	3251.982	Pt I	100	1	-	3249.440	Ni I	30	-	-
3254.708	Ru	50	9	-	3251.944	Mo	3	1	-	3249.429	Ce	10	-	-
3254.680	Mo	8	50	-	3251.917	Th	10	8	-	3249.370	Ti II	8	20	-
3254.667	Ce	3	-	-	3251.912	Ta	35	1	-	3249.351	La II	300	80	-
3254.542	Hu I	50	9	-	3251.911	Ti II	50	150	-	3249.342	Er	25	8	-
3254.5	Rn	-	[30]	Wo	3251.90	Dy	10	2	-	3249.192	Fe	70	35	-
3254.488	U	2	1	-	3251.890	Ru	30	3	-	3249.170	Ce	25	-	-
3254.483	Dy	5	2	-	3251.885	Ce	15	-	-	3249.033	Fe	1	-	-
3254.403	Ir I	20	1	-	3251.870	V	10	50	-	3248.935	Cb	5	50	-
3254.378	Sm II	100	15	-	3251.836	Cr	35	-	-	3248.909	U	2	1	-
3254.363	Fe	200	150	I	3251.804	Nd	4 d	-	-	3248.892	Th	10	10	-
3254.363	Ca	1 h	2	-	3251.649	Mo	6	3	-	3248.843	Ru	5	-	-
3254.359	W	6	4	-	3251.64	Tm	25	20	Me	3248.75	Pr	4	-	-
3254.31	Lu	50	150	Me	3251.64	Se	-	[20]	Bl	3248.698	V I	15	3	-
3254.290	Sm II	10	1	-	3251.640	Pd I	200	500	-	3248.602	Ti I, II	25	200 r	-
3254.287	Ce	3	-	-	3251.625	Cb	5	3	-	3248.554	Th	4 d	4 h	-
3254.276	Zr I	40	40	-	3251.58	Cr	30	-	-	3248.547	Re	25	-	-
3254.250	Ti II	35	125	-	3251.487	Cb	4	2	-	3248.528	Ce	4	-	-
3254.23	Eu	5	4 h	-	3251.45	Eu	5	3	-	3248.522	Ta	100	3 h	-
3254.206	Co I	300 R	-	-	3251.37	Te	-	[150]	Bl	3248.516	Mn	100	100	-
3254.067	Cb	20	300	-	3251.370	Ce	4	-	-	3248.502	Pt I	2	-	-
3254.066	Nd	8	2	-	3251.361	Mo	4	2	-	3248.457	Ni I	150	2	-
3254.066	Th	3	-	-	3251.34	Tm	10	12	Me	3248.428	Ce	12	-	-
3254.039	Mn	50	25	-	3251.329	Ru	30	3	-	3248.364	Dy	12	4	-
3254.013	Ce II	30	4	-	3251.32	Sc II	15	8	-	3248.336	U	5	3	-
3253.949	Fe	20	8	-	3251.265	Yt I	2 h	3	-	3248.28	Ca	1 h	3	-
3253.948	Re	15	-	-	3251.260	Cb	2	15	Me	3248.206	Fe I	200	150	-
3253.931	Sm II	50	8	-	3251.260	Dy	100	100	-	3248.15	Ne II	-	[7 I]	Bn
3253.91	Dy	4	1	-	3251.235	Fe I	300	150	-	3248.140	Sm	10	4	-
3253.870	Th	5	1	-	3251.225	W II	10	18	-	3248.065	Ce	5	-	-
3253.835	Fe	2	1	-	3251.135	Mn	50	25	-	3248.03	Kr II	-	[6 wh]	Me

3247.9—3238.9 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3247.996	Os	1	5	—	3244.60	Tb	8	3	Ed	3241.982	Os	15	12	—
3247.908	V	—	5	Me	3244.578	Ru	5	—	—	3241.94	Tb	8	3	Ed
3247.898	Ce	3	—	—	3244.511	Cb	2 h	30	—	3241.835	Be II	5	[50]	Ps
3247.8	Rn	—	[10]	Pe	3244.472	Mo	5	5	—	3241.818	Cb	2	10	—
3247.79	Tb	8	—	Ed	3244.47	Eu	2 W	1	—	3241.80	Si	—	6	Sy
3247.74	Xe	—	[4 wh]	Hu	3244.456	Ru	6	—	—	3241.796	Os	15	10	—
3247.709	U	4	5	—	3244.450	Th	5 d	1 d	—	3241.79	Pd	—	2	Bx
3247.667	Ir I	3	1	Ab	3244.36	Cl	—	[5]	Jv	3241.76	Ca	1	2 h	—
3247.621	Mo	30	20	—	3244.341	Ru	5	—	—	3241.685	Fe II	—	2	—
3247.61	In	—	15	Sq	3244.31	Pr	3	—	—	3241.646	Be II	5	[15]	Ps
3247.552	Ce	15	—	—	3244.21	I	—	[10]	Bl	3241.593	U	3	1	—
3247.55	A	—	[3]	Rt	3244.20	Eu	10	2	Kn	3241.572	Sm II	20	6	—
3247.55	Ag	15	15	—	3244.190	Fe I	300	200	S	3241.546	Co I	5	—	—
3247.547	Sb	2 h	10	—	3244.189	Ba I	3	—	—	3241.534	Th	3	3 h	—
3247.542	Mn	125	—	—	3244.15	Ne II	—	[18]	Bl	3241.53	Tm	150	125	Me
3247.540	Cu I	5000 R	2000 R	IBu	3244.115	Cr I	30	4	—	3241.517	Ir I	100	50	—
3247.530	Eu	50 W	5	—	3244.09	Tm	6	15	Me	3241.5	Rn	—	[40]	Pe
3247.52	Er	18 d	2	—	3243.976	Zr I	4	—	—	3241.464	Re I	25	—	—
3247.5	Cs	—	[4]	Bs	3243.949	Ce	3	—	—	3241.426	Os	15	10	—
3247.474	Cb	50 w	100 w	—	3243.842	Co I	100	—	—	3241.411	W	6	5	—
3247.393	Fe II	—	2	—	3243.828	Cb	2	5	—	3241.397	Eu	25	1 h	—
3247.366	Sm	4	—	—	3243.803	Ti I	10	1	—	3241.358	Ce	3	—	—
3247.30	Eu	4	1	—	3243.78	Dy	12	3	—	3241.280	Sb	—	[350 Wh]	Lg
3247.278	Fe I	20	10	—	3243.780	Mn	100	75	—	3241.27	I	—	[5]	Bl
3247.274	Cr I	20	1	—	3243.724	Fe II	—	60	—	3241.235	Ru I	60	12	—
3247.250	Ce	3	—	—	3243.71	Pt II	4	20	Sh	3241.214	Ce	10	—	—
3247.213	Fe	10	10	—	3243.71	A	—	[20]	Ms	3241.167	V I	20	10	—
3247.209	U	2	1	—	3243.68	Ti II	—	[12]	El	3241.143	Sm II	50	10	—
3247.18	Tb	15	3	Ed	3243.646	U	8	8	—	3241.112	Th	10	12	—
3247.179	Co I	80	—	—	3243.579	Co I	8	—	—	3241.046	Zr II	10	10	—
3247.171	Fe II	—	10	—	3243.573	Ce	5	—	—	3241.044	Os	80	20	—
3247.17	Sm	1	10	—	3243.513	Ti I	7	1	—	3240.951	Cr I	35	2	—
3247.118	Ce	3	—	—	3243.498	Ru	70	12	—	3240.886	Mn	3	—	—
3247.04	La I	8	2	—	3243.469	Er	4	1	—	3240.878	Dy	10	5 h	—
3247.034	U	8	—	—	3243.403	Fe	70	20	—	3240.714	U	3	—	—
3247.00	Kr II	—	[12 wh]	Me	3243.40	Au II	3	8	—	3240.713	Mo	3	60	—
3246.997	Co I	35	—	—	3243.370	Ce II	—	10	—	3240.71	Ti II	3	3	—
3246.962	Fe I	100	70	—	3243.359	Ta	25	1	—	3240.672	Ce	3	—	—
3246.90	Ta	35 h	—	Ks	3243.353	Hf	15	—	—	3240.67	Eu	4 W	1	—
3246.843	Sm	9	2	—	3243.34	Ne II	—	[4]	Bn	3240.65	Tb	15	8	Ed
3246.780	Eu	4 wh	2	—	3243.336	W II	5	20	—	3240.616	Mn	60	30	—
3246.780	Cb	5	—	—	3243.329	Cb	1 h	5 h	—	3240.605	Th	5	3	—
3246.689	Cb	—	5	—	3243.272	V I	20	10	—	3240.562	Ir I	3	—	—
3246.674	Ce I, II	35	3	—	3243.252	Er	3	1	—	3240.493	Mo	25	5	—
3246.581	Th	5	5	—	3243.214	Ce	2	—	—	3240.484	Er	12	2	—
3246.51	Tb	8	3	Ed	3243.202	Mo	—	25	—	3240.476	Th	10	10	—
3246.482	Fe	40	25	—	3243.20	Tb	15	3	Ed	3240.399	Mn	60	30	—
3246.41	Eu	12	5	Kn	3243.164	Cu I	15	15	—	3240.398	Ce	4	—	—
3246.311	Re	20	—	—	3243.15	Cd	—	15	Vs	3240.354	U	8	6	—
3246.293	Ir I	2	—	—	3243.131	Pd II	—	60 h	Dn	3240.229	Tm	100	80	Me
3246.210	Ru	1	25	—	3243.109	Fe	50	20	—	3240.214	Ir I	15	1	—
3246.18	Kr	—	[2]	Me	3243.058	Ni I	400 R	15	—	3240.203	Pt I	40	6	—
3246.111	U	12	8	—	3243.034	Th	8	8	—	3240.20	Kr II	—	[2]	Me
3246.02	Eu	10	—	—	3243.00	Hf II	6	8	Me	3240.192	Pb	30 h	—	—
3245.984	Fe I	200	150	Bu	3242.93	Lu	—	4 h	Me	3240.167	Ca	—	2	—
3245.923	Mo	10	6	—	3242.86	Pb I	—	40	Sx	3240.14	U	2 d	2 d	—
3245.86	Tm	20	10	Me	3242.848	Ru I	20	—	—	3240.11	Eu	3	1 wh	—
3245.801	Sm	20	4	—	3242.834	Ta	125	10	—	3240.043	Dy	7	—	—
3245.760	Th	12	15	—	3242.79	Se	—	[10]	Ro	3240.027	Pr	10	1	—
3245.744	Co I	3	—	—	3242.788	Ce	3	—	—	3240.015	Fe	1	1	—
3245.703	Nd	8	4	—	3242.764	Zr I	200 h	—	—	3240.00	Tb	15	8	Ed
3245.684	Ce	2	—	—	3242.703	Pd I	2000 wh	600 R	—	3239.987	Ta	200	18 w	—
3245.678	Os	5	3	—	3242.608	Ir I	3	—	—	3239.93	Eu	6	—	—
3245.618	Ru	3	4	—	3242.566	Ta	7	1	—	3239.834	V	—	30	Me
3245.546	Ce	15	—	—	3242.539	Ce	2	—	—	3239.73	Bi I	10	3	To
3245.542	Cr	20	15	—	3242.531	Cb	3	10	—	3239.664	Ti II	25	80	—
3245.485	Cr I	10	2	—	3242.51	Dy	4	—	—	3239.66	Tb	15	8	Ed
3245.469	Eu	2 h	—	—	3242.482	Sm II	4	2	—	3239.64	Br	—	[3]	Bl
3245.462	Pr	40	4	—	3242.455	Nd	4	2	—	3239.638	Sm II	100	25	—
3245.42	Tb	15	3	Ed	3242.415	Cb	1	5	—	3239.62	U	4	4	—
3245.370	Ni I	2	—	—	3242.323	Ir I	8	—	—	3239.611	Yb	2	—	—
3245.284	Ta	70	2	—	3242.285	Dy	4	—	—	3239.605	Ru I	50	5	—
3245.17	Tb	15	8	Ed	3242.28	Cs	—	[10]	Bs	3239.59	Dy	5	—	—
3245.166	Ce	25	1	—	3242.280	Yt II	60	100	—	3239.438	Hf	15	—	—
3245.165	Sm II	9	2	—	3242.272	Fe	3	1	—	3239.436	Fe I	400	300	S
3245.14	Dy	2	1	—	3242.257	Th	8	5	—	3239.366	Sm	5	—	Kn
3245.13	Eu	3 w	—	—	3242.19	Se II	—	[25]	Bl	3239.32	I	—	[10]	Bl
3245.124	Ce	8	—	—	3242.165	Ru	80	—	—	3239.32	Tb	8	—	Ed
3245.120	La II	400	300	—	3242.163	Zr II	1	2 h	—	3239.289	Th	10	8	—
3245.07	Cb	—	5	—	3242.135	Ce II	12	—	—	3239.193	Yb	2	8	—
3244.954	Ag	—	10 h	—	3242.048	Ta	125	15	—	3239.169	Re	10 h	—	—
3244.950	Ce	10	—	—	3242.031	Sm	40	4	—	3239.038	Ti II	60	300 R	—
3244.794	U	12	6	—	3242.025	W	10	10	—	3239.034	Fe I	5	3	—
3244.673	Sm	15	6	—	3241.991	U	10	8	—	3239.02	Ho	—	4	Ex
3244.645	Eu	4	—	—	3241.986	Ti II	60	300 R	—	3238.934	Th	3	—	—

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3238.902	Ce	4	-	-	3235.90	Dy	35 s	8	-	3233.24	W	2	9	-
3238.89	Eu	2 h	3 wh	-	3235.878	Mo	3	2	-	3233.234	Cr I	30	4	-
3238.867	Pr	12	2	-	3235.867	Ta	25	-	-	3233.208	Ce	2	-	-
3238.86	Cu II	-	3	-	3235.864	U	8	-	-	3233.190	V I	40	3	-
3238.81	Cd II	-	[5]	Tk	3235.843	Th	12	12	-	3233.174	Ni I	4	-	-
3238.799	Th	4	3	-	3235.836	Fe	2	1	-	3233.154	Ag	-	10	-
3238.775	Ru I	50	1	-	3235.81	Eu	8	5	-	3233.142	W II	2	6	-
3238.76	Cr	6	200	-	3235.79	Tb	15	3	Ed	3233.140	Mo	50	30	-
3238.757	U	2	1	-	3235.785	Rh	5	-	-	3233.11	Zr I	6	-	Ks
3238.70	Dy	4	-	-	3235.783	Co I	5 h	-	-	3233.054	Fe	100	60	-
3238.691	W	5	4	-	3235.753	Ni I	15	-	-	3233.02	Ca	-	4	Ad
3238.628	Os	100	20	-	3235.713	Cu I	15	7	-	3232.963	Ni I	300 R	35	-
3238.6	air	-	5	-	3235.694	I	-	[10]	Ke	3232.875	Ce	3	-	-
3238.527	Ru	100	45	-	3235.670	Ce	15	1	-	3232.874	Co I	60	25	-
3238.51	Cr	25	8	-	3235.65	La I	8	-	-	3232.80	Kr I	-	[2]	Me
3238.490	W	7	6	-	3235.62	Ho	-	4 h	Ex	3232.793	Cb	-	2 h	-
3238.474	Nd	10	-	-	3235.59	Fe	5	2	-	3232.791	Ti I	8	-	-
3238.43	Se II	-	[15]	Bl	3235.551	U	2	-	-	3232.791	Fe II	-	50	-
3238.399	Mo	-	40	-	3235.538	Co I	60	-	-	3232.78	I	-	[5]	Bl
3238.364	Re	2	-	-	3235.45	Tm	80	40	Me	3232.751	Ru I	50	4	-
3238.259	Nd	6	2	-	3235.432	Pr	10	1	-	3232.665	Ce	3	-	-
3238.224	Ti I	8	4	-	3235.385	Mo	20	25	-	3232.652	W	9	8	-
3238.178	Dy	3	-	-	3235.227	U	6	8	-	3232.652	Dy	15	4	-
3238.118	Th	12	15	-	3235.13	Eu	10	-	-	3232.63	Te	-	[10]	Bl
3238.087	Cr	30	20	-	3235.101	Ru	6	-	-	3232.620	Sm	10	3	-
3238.024	Cb	20	200	-	3235.020	Mo	-	25	-	3232.61	Li I	1000 R	500	Fl
3237.985	Mo	15	3	-	3235.011	Ce	10	1	-	3232.58	Cl	-	[4]	Jv
3237.979	Er	20	3	-	3235.003	Mn	30 h	-	-	3232.540	Os	150	10	-
3237.96	Ti II	-	[12]	El	3234.995	Th	5	1 h	-	3232.504	Rh I	6	-	-
3237.929	U	3	1	-	3234.990	Ca	-	2	-	3232.499	Sb I	150	250 wh	-
3237.911	Nd	10	4	-	3234.985	W	9	7	-	3232.497	Sm	4	-	-
3237.881	Sm II	10	5	-	3234.96	Ba	-	3	-	3232.486	W	9	8	-
3237.874	V II	30	100 h	-	3234.926	Na II	6	[20]	Fr	3232.38	Ne II	-	[7]	Bl
3237.867	U	8	-	-	3234.892	Ce	18 s	5	-	3232.356	Cd II	-	2	-
3237.866	Ir I	2	-	-	3234.801	Zr I	2	-	-	3232.353	Pb	30	-	Kl
3237.846	Ta	70	7 h	-	3234.798	Er	4	-	-	3232.32	Pd I	2	-	-
3237.84	Mo	-	20	-	3234.798	Ru I	10	1 h	-	3232.31	Eu	4 w	1	-
3237.819	Fe II	1	100	-	3234.731	Os	100	10	-	3232.308	Th	8	-	-
3237.729	Cr	40	30	-	3234.73	I	-	[3]	Ke	3232.290	Ce	15	-	-
3237.685	Cb	2	50	-	3234.728	V I	8	-	-	3232.280	Ti II	30	100	-
3237.68	W	-	8	-	3234.693	Ta	70	10	-	3232.279	Ta	25	1	-
3237.68	Nd	2	4 h	-	3234.649	Ni I	300	15	-	3232.27	Se	-	[8]	Bl
3237.662	Rh I	60	20	-	3234.64	Rb	-	[5]	Ok	3232.231	W	3	2	-
3237.511	Re I	30	-	-	3234.611	Fe I	200	125	-	3232.157	U	12	12	-
3237.414	Mn	30 h	-	-	3234.52	Ho	2	6	Ex	3232.15	Kr II	-	[2 h]	Me
3237.402	Fe II	-	10	-	3234.516	Ti II	100	500 r	-	3232.134	W	6	9	-
3237.39	Eu	12 w	5	-	3234.516	V	-	20	-	3232.123	Th	3	25 h	-
3237.38	Ho	-	4	Ex	3234.51	A I	-	[100]	Ms	3232.055	Os I	500 R	20	-
3237.227	Th	3	5	-	3234.510	Ir I	3	-	-	3232.027	Yt II	3	3	-
3237.222	Fe	3	1	-	3234.50	Tb	15	15	Ed	3232.026	Er	18	3	-
3237.22	Tb	9	-	Ed	3234.495	Ce	10	3	-	3232.001	Ir	20	1	-
3237.197	Sm II	9	4	-	3234.430	Ru	3	50	-	3232.00	Tb	8	3	Ed
3237.189	Cb	2	2	-	3234.421	Sm	10	4	-	3231.98	Yb	2	6	-
3237.157	U	3	1	-	3234.30	Eu	3 w	-	-	3231.980	Ce	3	-	-
3237.098	Dy	3	-	-	3234.274	Ce	5	-	-	3231.950	V	8	100	-
3237.089	W	10 s	5	-	3234.223	Pr	12	2	-	3231.938	Sm II	20	8	-
3237.075	Mo	40	25	-	3234.196	Os	150	12	-	3231.86	Eu	3 w	-	-
3237.028	Co I	100	-	-	3234.180	Mo	8	5	-	3231.807	Ce	2	-	-
3236.998	Re	2 W	-	-	3234.161	Ce I, II	40	8	-	3231.712	Fe II	-	30	-
3236.86	In II	-	[5]	Ps	3234.16	Cs	-	[6]	Bs	3231.70	Cl	-	[5]	Bl
3236.856	Ce	8	-	-	3234.124	Zr I	8	3	-	3231.693	Zr II	10	10	-
3236.82	A	-	[5]	Rt	3234.119	Co I	2	-	-	3231.665	Ta	18 h	1 h	-
3236.797	Tm	100	80	Me	3234.06	Cr	10	150	-	3231.582	Fe I	3	1	-
3236.778	Mn	75	75	-	3234.05	Si	-	7	Sy	3231.513	Sm II	20	9	-
3236.735	Ce II	35	8	-	3233.971	Fe I	300	150	-	3231.51	Tm	40	30	Me
3236.67	Cd	-	[12]	Es	3233.968	Mn	75 wh	-	-	3231.46	Tb	15	3	Ed
3236.63	Dy	5	3	-	3233.90	Cu I	2 h	2 h	-	3231.417	Os	150	12	-
3236.630	Sm	100	40	-	3233.80	Hf II	3	4	Me	3231.315	Ti II	15	25	-
3236.62	W	-	8	-	3233.773	Ce	15	-	-	3231.266	Ho I	-	[3]	Ps
3236.578	Zr II	20	40	-	3233.768	V	5	20	-	3231.236	Ce II	30	10	-
3236.573	Ti II	70	300 r	-	3233.75	Tm	10	-	Me	3231.235	Yt II	2	3	-
3236.56	Ho	-	4	Ex	3233.661	Sm	20	9	-	3231.23	Pb	-	10	Sx
3236.499	Nd	6 d	-	-	3233.66	Ca	-	2 h	-	3231.2	bb Ca	4	-	L
3236.420	Mo	4	2	-	3233.61	P	-	[20]	Gu	3231.175	Cu I	15	10	-
3236.403	Cb	10	200	-	3233.541	V I	10	25	-	3231.123	Mo	5	1	-
3236.34	U	2 d	2 d	-	3233.538	Be II	5	[5]	Ps	3231.06	Tb	30	8	Ed
3236.224	Zr II	8	10	-	3233.53	Tb	8	-	Ed	3230.967	Sm	4	1	-
3236.223	Fe I	300	200	S	3233.483	Sm	8	4	-	3230.967	Fe I	300	200	Me
3236.223	Ti I	2	-	-	3233.441	Ce II	30	2	-	3230.96	Tm	5	10	Me
3236.20	Tb	8	3	Ed	3233.422	Pt I	40	10	-	3230.89	F	-	[3 h]	Di
3236.16	Yb	2	10	-	3233.422	Dy	2	-	-	3230.869	Th	15	12	-
3236.122	Ti II	10	15	-	3233.36	Ho	6	2 h	Ex	3230.855	Ta	200	18 w	-
3235.974	Ru	12	-	-	3233.334	Th	8	8	-	3230.836	W II	1	7	-
3235.942	Re	50	-	-	3233.32	Rh	2	5	-	3230.786	Mo	4	2	-
3235.921	W	8	6	-	3233.251	Ag	5	2	-	3230.763	Ir I	20	1	-

3230.7—3222.9 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3230.719	Mn	75	75	-	3228.492	Sm	20	6	-	3225.672	Ce	25	3	-
3230.70	Tb	8	-	Ed	3228.486	Cb	-	2 h	-	3225.631	W	10	8	-
3230.69	Cl	-	[6]	Bl	3228.435	Ta	2 h	25 h	-	3225.616	Th	5	5	-
3230.68	Kr I	-	[2]	Me	3228.330	Re	5	-	-	3225.58	A I	-	[20]	Ms
3230.646	V I	20	8	-	3228.27	Te	-	[5]	Bl	3225.486	Zr I	5 r	2 h	-
3230.636	Au I, II	15	80	-	3228.254	Fe I	100	80	-	3225.485	Ce	2	-	-
3230.59	W II	1	10 s	-	3228.215	Mo	40	25	-	3225.479	Cb	150 w	800 wr	-
3230.585	Er	25	15	-	3228.183	Ti I	6	-	-	3225.44	Gd II	2	1	-
3230.58	Eu	4	-	-	3228.182	V I	15	5	Me	3225.43	Tb	8	3	Ed
3230.572	I	-	[10]	Ke	3228.17	Se II	-	[8]	Bl	3225.412	U	8	-	-
3230.57	Ho	6	6	Ex	3228.157	Ru	12	4	-	3225.408	Ce	2	-	-
3230.55	Rb	-	[15]	Ok	3228.090	Mn	100	100	-	3225.359	Th	12	15	-
3230.544	Sm II	100	30	-	3228.048	Ce	25	-	-	3225.356	Cr	-	20	-
3230.43	Si	-	3	Sy	3228.048	Nd	8	2	-	3225.289	B II	5	-	-
3230.399	Os	40	5	-	3228.001	Rb I	20	-	-	3225.20	Pr	3	-	-
3230.32	Dy	2	-	-	3228.001	Au II	-	10	-	3225.193	Cb	3	1	-
3230.288	Ce	8	-	-	3227.996	Fe	3	1	-	3225.184	Sm	8	2	-
3230.287	Pt I	100	6	-	3227.95	Ti I	2 h	-	-	3225.17	Yt II	8	12 hl	-
3230.240	Cb	2	30	-	3227.885	Ru I	20	10	-	3225.16	W II	1	4	-
3230.211	Fe I	100	80	-	3227.840	Hg	-	2	St	3225.08	Dy	10	1	-
3230.16	Ne II	-	[18]	Bn	3227.802	Fe I	4	-	-	3225.08	Xe II	-	[10]	Hu
3230.15	Tm	10	20	Me	3227.763	Co I	5	-	-	3225.026	Hf II	4	3	-
3230.12	Er	4	1	-	3227.75	Cl	-	[3]	An	3225.023	Co	3	-	-
3230.079	Ce	10	1	-	3227.747	Fe II	200	300	-	3225.020	Ni I	300	6	-
3230.061	Hf	10	-	-	3227.71	Dy	3	1	-	3225.016	U	5	1	-
3230.03	Tb	15	8	Ed	3227.69	Cb	-	3 h	-	3224.999	Pr	10	1	-
3230.023	Ce	3	-	-	3227.491	W	9	8	-	3224.931	Fe	3	1	-
3229.994	Fe	20	20	-	3227.48	Tb	8	3	Ed	3224.834	Ce	10	-	-
3229.993	I	-	[15]	Ke	3227.456	Re	40 w	-	-	3224.82	Ne II	-	[12]	Bn
3229.99	Ag	1	4 h	-	3227.43	Dy	2	-	-	3224.761	Mn	75	40	-
3229.94	Dy	8 d	2	-	3227.421	U	2	1	-	3224.664	Cu I	25	10	-
3229.93	Er	10	2	-	3227.409	V I	15	10	-	3224.651	Ru	4	-	-
3229.91	A I	-	[3]	Ms	3227.317	Ta	70 l	10	-	3224.642	Co I	60	-	-
3229.880	Ta	35 h	50	-	3227.280	Os	125	12	-	3224.430	Cb	3	4	-
3229.873	Fe	10	10	-	3227.2	Cs	-	[4]	Bs	3224.419	Pr	10	1	-
3229.872	Nd	-	10	-	3227.165	Pt	4	3	-	3224.408	Mo	4	-	-
3229.866	Cr	-	8	-	3227.16	Er	18	2	-	3224.33	Ca	-	3	-
3229.794	Mo	25	4	-	3227.114	Ce	25	-	-	3224.295	Ce	3	-	-
3229.791	Fe I	1	1	-	3227.113	V I	10	-	-	3224.27	Ho	-	4	Ex
3229.75	Ti I	2000	800	Fl	3227.08	Pb	-	5	Sx	3224.261	U	10	12	-
3229.721	Zr II	2 h	-	-	3227.063	Fe I	30	10	-	3224.25	B II	-	5	En
3229.711	Mn	2	-	-	3227.011	Th	8	8	-	3224.241	Ti II	15	150	-
3229.710	Mo	-	50	-	3226.996	Hf II	6	3	-	3224.233	Sm	9	3	-
3229.69	Bo I	15	-	-	3226.985	Co	80 r	-	-	3224.21	Cd	-	[10]	Es
3229.660	W	9	8	-	3226.984	Ni I	100	-	-	3224.15	Tm	2	20	Me
3229.606	V I	15	8	-	3226.922	V	1	50	Me	3224.018	U	2	-	-
3229.599	Ce	10	-	-	3226.899	Ru	4	2	-	3223.905	Ce	15	1	-
3229.595	Sm II	8	2	-	3226.843	Ta	35	1	-	3223.901	Cb	5 w	3 h	-
3229.593	Fe	10	5	-	3226.842	Sm	30	10	-	3223.886	Ir I	3	1 h	-
3229.59	Tb	8	-	Ed	3226.81	Tm	15	30	Me	3223.858	Os	100	8	-
3229.563	Cb	5	50	-	3226.795	Mo	2	3 h	-	3223.844	Fe I	2	2	-
3229.52	Te	-	[25]	Bl	3226.785	U	4	3	-	3223.826	Ta	200 W	50 W	-
3229.502	U	18	25	-	3226.771	Ti II	10	35	-	3223.803	Th	6	2	-
3229.5	Rn	-	[5]	Pe	3226.720	Fe I	8	3	-	3223.776	Nd	3	2	-
3229.50	Ne II	-	[7]	Bn	3226.710	Ir I	20	1	-	3223.740	Gd	5	2	-
3229.423	Ti II	15	70	-	3226.602	Cu I	12	7	-	3223.692	U	6	-	-
3229.371	Mg I	25	-	-	3226.58	W	-	10	-	3223.69	Te	-	[5]	Bl
3229.37	Dy	10	2	-	3226.57	Kr II	-	[5 whl]	Me	3223.574	Sn	10	15	Ar
3229.363	Ce II	25	3	-	3226.555	Cr I	30	1	-	3223.55	V	3	1	Me
3229.36	Mo	-	5	-	3226.55	Mo	-	20	-	3223.534	Ni I	5	-	-
3229.282	Ir I	35	2	-	3226.50	Ti I	2 h	-	-	3223.52	Kr II	-	[12 h]	Me
3229.236	Ta	300 w	70 w	-	3226.412	Th	10	10	-	3223.519	Ti I	15	2	-
3229.206	Os	125	5	-	3226.383	Fe II	-	1	-	3223.519	Ce	5	-	-
3229.204	Cr	35	-	-	3226.38	Dy	6	1	-	3223.512	Ir I	3	-	-
3229.193	Ti II	30	60	-	3226.374	Ru I	50	12	-	3223.51	Ag II	1	25 h	-
3229.19	Tb	15	8	Ed	3226.326	Gd	3	3	-	3223.494	Mo	6	1	-
3229.123	Fe I	80	50	-	3226.307	Ta	2	1	-	3223.452	Fe	1	-	-
3229.122	Ce	25	1	-	3226.240	Ti I	2	-	-	3223.435	Co I	20	10	-
3229.112	Rb I	10 h	-	-	3226.171	U	10	10	-	3223.4	Rb	-	[20]	Dr
3229.072	U	6	-	-	3226.13	Ca I	8	-	Cw	3223.365	Ce	15	1	-
3229.03	Xe	-	[3 h]	Hu	3226.128	Ti I	25	7	-	3223.324	Cb	10	100	-
3229.0	F	-	[2 h]	Di	3226.121	Th	10	8	-	3223.319	Sm	10	4	-
3228.97	Dy	9	1	-	3226.106	V I	25	5	-	3223.308	Er	25	5	-
3228.969	Th	12	15	-	3226.036	Ce II	8	-	-	3223.29	Dy	20	1	-
3228.96	W II	1	10	-	3226.034	Mn	40	20	-	3223.284	Th	5	3	-
3228.952	Cb	1	3	-	3226.021	Fe	2	1	-	3223.274	Ru I	60	35	-
3228.91	Tm	15	30	Me	3226.008	La II	2	-	-	3223.27	Ho	-	4 h	Ex
3228.905	Fe	80	40	-	3226.00	A	-	[3]	Rt	3223.268	Fe	4	2	-
3228.810	Zr II	10	8	-	3225.976	Na II	2	[20]	Fr	3223.224	Mn	4 h	-	-
3228.777	Sm II	20	4	-	3225.96	Dy	18	3	-	3223.147	Co I	3	-	-
3228.732	Re	25	-	-	3225.922	Sm	10	4	-	3223.116	W	8	4	-
3228.605	Ti II	30	100	-	3225.896	Ca I	80	10	IWg	3223.009	Ir I	2	-	-
3228.599	Yb	1	-	-	3225.856	Th	5	2	-	3223.00	Kr II	-	[6]	Me
3228.597	Fe	5	2	-	3225.852	Yb	3	15	-	3222.97	Tb	8	3	Ed
3228.530	Ru I	50	150	-	3225.789	Fe I	300	150	S	3222.952	Cb	2	2	-

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R
3222.90	Mo	—	40	—	3219.810	Fe I	100	80	—	3216.779	Mo	5
3222.853	Ce	61	1	—	3219.72	Er	10	—	—	3216.76	O II	—
3222.842	Ti II	20	150	r	3219.671	Cb	2	2	—	3216.75	A	—
3222.751	Cb	3	2	—	3219.585	Ta	20 s	2 s	—	3216.717	Ce	12
3222.741	Ti I	3	—	—	3219.581	Fe I	200	125	—	3216.708	Ag	—
3222.64	Rb	—	[40]	Ok	3219.551	Pr	20	5	Kn	3216.682	Yt II	40
3222.624	Nd	8	4	—	3219.514	Ir I	35	2	—	3216.67	Ho	—
3222.611	Ce	6	—	—	3219.416	Sm	25	10	—	3216.64	Tm	5
3222.57	Lu	—	8 h	Me	3219.402	Mo	5 h	25	—	3216.63	Dy	25
3222.565	Cd II	—	2	—	3219.30	P	—	[100 w]	Gu	3216.625	Th	3
3222.470	Zr II	2	3	—	3219.212	Ti I	15	3	—	3216.620	Ta	3
3222.44	Ba I	31	—	—	3219.177	Pr	7	1	—	3216.61	Tb	8
3222.42	A II	—	[3]	Rt	3219.169	U	6	3	—	3216.587	Ce	3
3222.411	Ce	18	1	—	3219.153	Co I	60	—	—	3216.586	Zr I	2
3222.37	Tb	8	3	Ed	3219.135	Os	25	8	—	3216.56	Cr	3
3222.293	U	8	3	—	3219.133	Cr	—	30	—	3216.523	Ru I	12
3222.278	Ba I	2	—	—	3219.1	Ce	—	[4]	Bs	3216.395	Ce	3
3222.22	Ba I	20	—	—	3219.09	Lu	—	3 h	Me	3216.3	Rn	—
3222.173	Nd	6	—	—	3218.983	Ti I	2 h	—	—	3216.284	Na II	—
3222.070	Cb	5	30	—	3218.974	Pd I	300	8	—	3216.25	Kr II	—
3222.069	B II	—	5	—	3218.944	Ce	50	8	—	3216.225	Ce	3
3222.069	Fe I	200	100	S	3218.93	Tb	50	50	Ed	3216.22	W II	6
3222.04	Tm	7	20	Me	3218.869	V I	20	15	—	3216.203	Ti I	8
3222.003	Ce	2	—	—	3218.81	Th	5 d	2	—	3216.201	U	5
3221.931	Fe I	2	1	—	3218.69	Cr	80 wh	2 wh	—	3216.189	Cb	2
3221.911	W	10	9	—	3218.686	Zr II	2	—	—	3216.181	Ce	3
3221.735	Mo	20	20	—	3218.684	Sn	18	50	—	3216.12	Tm	10
3221.70	Rb	—	[10]	Ok	3218.683	Ti I	2	—	—	3216.08	O II	—
3221.69	Eu	8 w	1	—	3218.63	Eu	4 w	—	—	3216.068	Mo	—
3221.652	Ni I	300	4	—	3218.606	W	10	9	—	3215.977	Ta	5
3221.651	Cb	—	10 w	—	3218.597	Sm	100	25	—	3215.940	Fe I	300
3221.64	A II	—	[3]	Rt	3218.508	Mo	5	1	—	3215.896	Ce	8
3221.63	Cd	—	[12]	Es	3218.460	Ir I	20	1	—	3215.813	La I	10
3221.628	Ba I	2	—	—	3218.44	Te	—	[100]	Bl	3215.782	Th	10
3221.617	W	7	6	—	3218.380	Ce I, II	30	2	—	3215.70	Cl II	—
3221.6	Rn	—	[18]	Wo	3218.358	V I	8	1	—	3215.688	U	1
3221.50	Dy	12	2	—	3218.336	U	8	6	—	3215.678	Ag	5
3221.470	Ce	2	—	—	3218.32	Yb	2	10	—	3215.65	W II	6
3221.42	Ho	—	4 h	Ex	3218.313	Th	8	4	—	3215.602	Ce	4
3221.412	U	6	2	—	3218.277	Rh I	60	—	—	3215.595	Cb	50
3221.383	Os	15	5	—	3218.270	Ti II	15	150	—	3215.588	Sm	10
3221.381	Ti I	25	6	—	3218.245	Pr	8	—	—	3215.560	W	10
3221.378	V	—	10	Me	3218.21	Ne II	—	[75]	Bn	3215.54	Tb	8
3221.315	Ta	70	15 s	—	3218.20	Hf II	8	8	Me	3215.416	Fe	10
3221.293	Th	15	40 h	—	3218.10	O II	—	[7]	Mh	3215.375	V I	20
3221.29	Tb	8	3	Ed	3218.036	Sm	15	5	—	3215.37	Ho	—
3221.281	Ir	10	1 h	—	3218.023	Os	20	4	—	3215.336	Co I	5
3221.273	Ni I	35	—	—	3217.984	Ta	2 r	1 h	—	3215.327	Ca I	5
3221.22	Yb	2	3	—	3217.942	Ti I	12	1	—	3215.281	Mo	4
3221.212	W	12 d	10 d	—	3217.9	Pb II	—	[15]	Ea	3215.265	Gd	5
3221.190	Ru	4	3	—	3217.882	Rh I	60	20	—	3215.26	W	—
3221.171	Ce II	50	8	—	3217.866	Ce	3	—	—	3215.243	Sm II	50
3221.151	Ti I	4	—	—	3217.864	Cb	5	5	—	3215.228	Fe	4
3221.125	Cb	4	5	—	3217.830	Ni I	10	5	—	3215.226	Cb	5
3221.08	Tm	7	—	Me	3217.8	Cd	—	[15]	Es	3215.189	Dy	40
3221.061	Ce	2	—	—	3217.797	Cb	3	1	Me	3215.129	Ca I	20
3220.927	Cb	10	10	—	3217.790	Er	4	—	—	3215.093	Ce	10
3220.871	Ce	30	—	—	3217.733	Th	8	5	—	3215.092	U	2
3220.855	Mo	8	8	—	3217.70	A	—	[3]	Rt	3215.073	Mo	25
3220.78	Rh	4	2	—	3217.576	Sm	3	2 h	—	3215.01	Tb	8
3220.780	Ir I	100	30	—	3217.533	Nd	4	—	—	3214.999	Cb	—
3220.778	Pt	2	—	—	3217.522	Ce	20	—	—	3214.883	Ce	2
3220.75	Ca	—	3	Ad	3217.503	K I	50 R	25	—	3214.872	Rh I	30
3220.730	Er	25	5	—	3217.457	Th	10	10	—	3214.822	Re	3
3220.606	Hf II	25	35	—	3217.400	Cr	30	20	—	3214.750	Ti II	20
3220.60	K II	—	[15]	Bn	3217.380	Fe I	200	125	S	3214.750	V II	20
3220.538	Pb	50 h	5	—	3217.305	Hf II	30	15	—	3214.697	U	12
3220.529	Nd	2 h	4 h	—	3217.286	Cb	10	5	—	3214.636	Dy	15
3220.488	Cb	3 h	5	—	3217.17	Yb	2	2	—	3214.63	Tm	15
3220.467	Ti II	—	25	—	3217.132	Ce	12	—	—	3214.630	Ce	2
3220.467	Pd II	—	2	—	3217.12	La II	2	10 h	Me	3214.446	Er	15
3220.46	Dy	10	2	—	3217.116	Nd	2 d	—	—	3214.442	Mo	20
3220.402	Ce	12 s	—	—	3217.113	V I, II	30	80 h	—	3214.40	Tb	8
3220.304	Th	12	10	—	3217.060	Ti II	40	150	—	3214.400	Pr	8
3220.277	Ti I	3 h	—	—	3217.057	Os	20	10	—	3214.399	Fe I	100
3220.25	Kr	—	[6 h]	Me	3217.017	K I	100 R	20 h	—	3214.38	Ne II	—
3220.189	Os	30	10	—	3217.02	Cb	2 w	200 w	—	3214.325	Rh I	70
3220.17	Tb	15	—	Ed	3216.996	Co I	2	—	—	3214.323	Th	6
3220.069	Ru	4	3	—	3216.946	Mn	75	75	—	3214.253	Ce	12
3220.062	W	8	7	—	3216.923	Ta	100 w	18 w	—	3214.243	Ti I	30
3219.95	Tb	50	50	Ed	3216.899	Ti	2	—	—	3214.189	Zr II	12
3219.948	Ce	2	—	—	3216.836	Sm II	40	10	—	3214.121	Sm II	30
3219.917	Re	2	—	—	3216.821	Ni I	6	—	—	3214.107	Re	25
3219.865	Sm	10	2	—	3216.8	Bi	8 h	2 h	To	3214.059	Ni I	18
3219.811	Ni I	4	—	—	3216.798	Ir	3 h	—	—	3214.040	Fe I	400

3214.0—3205.5 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R				
3214.024	Ce	15	-	3210.976	Hf	12	1	3208.167	Sm	25	8				
3213.938	V I	15	8	3210.973	Nd	6	2	3208.151	Ir I	10	-				
3213.907	U	3	2	3210.966	Mo	15	20	3208.13	La	2 h	10 hl				
3213.891	Re	10	-	3210.951	Ce	20	2	3208.100	W	9	8				
3213.882	Cb	2	-	3210.89	Kr II	-	[7]	Me	3208.09	Cb	2 h	10			
3213.747	Eu	100	20 h	3210.880	U	6	-	3208.049	Er	12	2				
3213.719	Hf	10	-	3210.838	Co	18 wh	-	3208.043	U	3	4				
3213.7	Cs	-	[6]	3210.834	Fe I	150	100	3208.025	Th	18	10				
3213.70	Ne II	-	[7]	3210.832	Sm II	5	2	3207.995	Cr	-	10				
3213.618	U	6	2	3210.82	Tm	40	10	Me	3207.96	Tb	8	-			
3213.578	Pr	10	1	3210.701	U	5	4	3207.906	Ne	-	[10]				
3213.573	Th	12	10	3210.656	Fe	1	-	3207.897	Ti I	10	2				
3213.548	Ir I	10	2	3210.652	Mo	4	1	3207.894	Pr	20	2				
3213.530	Ce	2	-	3210.64	Kr II	-	[2 h]	Me	3207.853	Ta	70	15			
3213.489	Re	20 w	-	3210.574	U	6	3	3207.799	W	8	6				
3213.463	Os	20	2	3210.57	Tm	40	50	Me	3207.780	Th	10	8			
3213.423	Ni I	12	-	3210.566	Eu	80	-	3207.70	Yb	-	2				
3213.399	U	5	3	3210.555	Mo	4	1	3207.671	U	8	-				
3213.317	Mo	10	1	3210.456	Mo	4	1	3207.654	Fe	2 h	1 h				
3213.314	Fe II	50	300	3210.451	Fe II	5	50	3207.624	Ce II	12	-				
3213.312	Os	50	40	3210.448	Pd II	-	60 h	3207.61	A II	-	[10]				
3213.30	Ho	-	4	3210.430	V I	10	5	3207.53	Tb	15	8				
3213.286	Nd	4	-	3210.4	Rn	-	[5]	Pe	3207.50	A I	-	[10]			
3213.146	W	7	4	3210.39	Ho	6	6 h	Ex	3207.410	V I	80 r	20			
3213.145	Ti I, II	25	25	3210.290	Cb	3	4	3207.35	Ag	-	4 h	-			
3213.086	U	10	8	3210.273	Th	10	10	3207.335	Cb	5	30	-			
3213.060	Ce	20	-	3210.27	Si	-	7 h	Sy	3207.327	Ti I	8	2			
3212.969	Ru I	10	6	3210.236	Fe I	150	100	3207.31	U	2	1	-			
3212.945	Re	50	-	3210.226	Co I	80	2	3207.29	Rh	3	6	-			
3212.899	Ce	3	-	3210.22	Tb	15	8	Ed	3207.286	Ce	8	-			
3212.895	Cr	-	30	3210.207	Cb	1	3	3207.252	W	12	10	-			
3212.884	Mn	100	100	3210.113	Sb	-	[6]	Lg	3207.23	Ca	1 h	2			
3212.858	Sm	10	2	3210.11	Yb	1	8	3207.176	Sm II	50	9	-			
3212.854	Zr II	5	3	3210.1	Cd	-	[12]	Es	3207.170	Mo	-	10	-		
3212.811	Th	6	3	3210.097	V I	10	5	3207.168	Ce	3	-	-			
3212.808	Eu	200	20	3210.094	Ce	8	-	3207.10	Dy	20	3	-			
3212.78	Ba	-	5	Py	3209.98	Ag	1 h	5 h	3207.094	Ir I	5	-	-		
3212.720	Os	40	10	3209.970	U	4	4	3207.09	Tb	8	3	Ed			
3212.684	Dy	6	2	3209.96	W	2	25	3207.089	Fe I	80	50	-			
3212.649	U	8	6	3209.930	Ca I	30	2	Cw	3207.08	Eu	2 h	-	-		
3212.593	Mo	15	10	3209.912	Ni I	20	-	3207.07	Cs	-	[4]	Bs			
3212.591	Ce	8	-	3209.866	Ta	3	1	3206.952	Ni I	8	-	-			
3212.577	Zr I	4	-	3209.726	Sm	3	2	3206.935	Th	10	8	-			
3212.56	La II	2	2	3209.712	Mo	-	30	3206.921	V I	5	-	-			
3212.54	A	-	[10]	Rt	3209.65	Cs	-	[10]	Bs	3206.921	Ce II	12	-	-	
3212.50	Ca	-	2	Ad	3209.636	U	6	6	3206.908	Mn	60	-	-		
3212.480	Ce	20	-	3209.61	I I, II	-	[5]	Bl	3206.885	Pd II	-	2	-		
3212.447	Dy	4	2	3209.56	Sr II	-	4	Sd	3206.86	Ho	6	4	Ex		
3212.434	V I	70	50	3209.54	Tb	8	3	Ed	3206.825	Ti I	10	2	-		
3212.379	Re	2	-	3209.510	Ce	3	-	3206.808	Cb	3	2	-			
3212.374	Pt I	6	-	3209.412	Pd II	-	2 h	3206.804	Mo	-	20	-			
3212.320	Ce	3	-	3209.38	Ne II	-	[7]	Bn	3206.8	Rn	-	[18]	Wo		
3212.29	Xe II	-	[3 h]	Hu	3209.359	Ce	3	-	3206.785	Ta	7 h	1 h	-		
3212.28	Yt II	6	8	3209.297	Fe	200	125	-	3206.774	Hf II	6	5	-		
3212.221	Ir I	5	-	3209.187	U	8	8	3206.692	U	6	1	-			
3212.186	Na II	35	[60]	Fr	3209.183	Cr II	40	125	3206.62	I	-	[5]	Bl		
3212.172	Fe	4	2	3209.17	Kr II	-	[7 hl]	Me	3206.509	Ce	12	-	-		
3212.143	Cb	1	3	3209.13	La II	3	3	Me	3206.461	Re	2 h	-	-		
3212.119	Ir I	25	15	3209.048	Ce	2	-	3206.406	W II	6 d	15	-	-		
3212.03	Dy	5	1	3209.030	Ti I	8	1	3206.40	Dy	40	5	-	-		
3212.013	Zr I	15	3	3208.99	Ne II	-	[4]	Bn	3206.386	Ta	70	15	-		
3212.01	Tm	50	40	Me	3208.88	I	-	[5]	Bl	3206.344	Ti I	10	3	-	
3211.992	Fe I	70	50	3208.851	Pt	3	-	3206.343	Cb	10	300	-	-		
3211.98	Hg	-	[5]	Ps	3208.834	Mo	150 r	60	3206.227	U	10	8	-		
3211.881	Fe	10	10	3208.81	Dy	10	2	3206.171	Th	6	3 h	-	-		
3211.87	Ho	-	4 h	Ex	3208.71	Ca	-	2	Ad	3206.15	Yb	1	3	-	
3211.812	Cb	1	10	3208.629	Ta	7	1	3206.14	V	-	10 h	3	Me		
3211.756	Re I	40	-	3208.607	Ti II	-	20 wh	3206.108	Hf	20	2	-	-		
3211.755	Sm	100	15	3208.590	Cr II	20	40	3206.10	Ca	-	5	Ad	-		
3211.683	Fe I	80	50	3208.585	Cb	3 w	100 w	3206.086	Rh	10	-	-	-		
3211.612	Ce	10	-	3208.570	W	9	10	3206.049	U	12	10	-	-		
3211.59	Xe	-	[2 wh]	Hu	3208.565	U	5	5	3206.035	Ce	2	-	-		
3211.573	V I	5	3	3208.475	Fe	100	80	3206.018	Sm	3 h	-	-	Kn		
3211.510	Mo	5	2	3208.392	Cb	-	2	3205.990	Ti II	3	15	-	-		
3211.496	He I	-	[2]	Ps	3208.352	V II	10	100	3205.960	Ce	10	1	-	-	
3211.487	Fe	80	40	3208.33	Br	-	[6]	Bl	3205.917	Nd	8	-	-		
3211.40	Cb	-	5	3208.312	Zr II	3	1	3205.886	Co I	2	-	-	-		
3211.387	Rh I	10	-	3208.28	Kr II	-	[40 h]	Me	3205.883	Mo	30	20	-	-	
3211.336	Ce	10	-	3208.280	W	12	10	3205.848	Ti I	10	1	-	-		
3211.309	Cr	35	12	3208.234	Cu I	25	15	3205.777	Os	10	5	-	-		
3211.20	Te	-	[35]	Bl	3208.227	Ag	2	4 h	3205.76	La II	4	5	-	-	
3211.196	Th	6	1	3208.224	Re	15	-	3205.632	Sm	2	-	-	-		
3211.17	Tb	8	3	Ed	3208.20	Hg II	-	[18]	Ps	3205.582	V I	20	10	-	-
3211.07	Ti I	2	-	3208.197	Ta	3	10	3205.541	Mo	5	2	-	-		
3211.006	U	-	2 h	3208.173	U	1	2	3205.503	W	9	7	-	-		

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
		Arc	Spk., [Dis.]			Arc	Spk., [Dis.]			Arc	Spk., [Dis.]
3205.49	Ta	10 W	-	3202.740	F II	-	[200]	3200.037	Ir I	6	-
3205.46	Dy	5	2	3202.735	U	4	4 h	3200.030	Ag	-	4 h
3205.44	Kr II	-	[2]	3202.70	Tb	8	3	3200.00	Tm	15	30
3205.406	Ce	5	-	3202.654	Fe I	2	1	3199.994	Hf II	20	30
3205.402	Re	15 h	-	3202.653	Ce	2	-	3199.965	W	8	7
3205.400	Fe I	300	200	3202.56	Dy	4	1	3199.915	Ti I	200	150
3205.312	Ru	4	1	3202.560	Fe	40	20	3199.877	U	4	1
3205.300	Th	10	6	3202.555	Mn	12	-	3199.820	V I	25	10
3205.262	V I	15	5 h	3202.54	Kr II	-	[15 h]	3199.802	Sm	4	-
3205.26	Kr II	-	[4]	3202.538	Ti II	25	200	3199.74	I II	-	[5]
3205.217	Mo	20	4	3202.525	Th	5	4	3199.66	Br	-	[8]
3205.168	Ti I	4	1	3202.506	Cr	-	15	3199.596	Sm	3	2
3205.148	Er	15	3	3202.469	U	4	4 h	3199.583	U	1	-
3205.098	Cr	1	40	3202.443	Ce	2	-	3199.56	Tb	30	15
3205.091	Ir I	20	5	3202.381	V I	100 r	20 r	3199.525	Fe I	300	200
3205.08	Ca	1 h	2	3202.356	Ce	10	-	3199.518	Re I	3 h	-
3205.073	U	-	-	3202.243	Ce	15	-	3199.42	Si	-	4
3205.03	A II	-	[5]	3202.239	Dy	2	-	3199.37	Sc II	2	8
3205.018	Pr	8	2	3202.221	Re	2	-	3199.342	Ni	5	-
3204.978	U	3	1	3202.219	Sm	2 h	2 h	3199.324	Co I	35	-
3204.970	Cb	10	150	3202.16	Hf II	5	5	3199.305	W	9	8
3204.935	Mo	-	25	3202.142	Ni I	25	-	3199.279	Ce	25	2
3204.920	Ce	10	-	3202.133	Mo	4	1	3199.241	Mo	-	15
3204.895	Zr I	10	-	3202.132	Th	6	4	3199.225	Ta	-	70 l
3204.892	Sm	25	9	3202.12	Cl II	-	[6]	3199.198	U	5	1
3204.870	Ti I	15	5	3202.04	Xe II	-	[8]	3199.049	Pr	20	3
3204.808	Pr	10	2	3201.976	Ta	40	7	3198.99	Sr I	10	4
3204.74	Au I	50	30	3201.8	Cd	-	[8]	3198.969	Th	10	9
3204.685	Re	2	-	3201.8	Rn	-	[5]	3198.944	U	2	2
3204.68	Yb	1	3	3201.792	Sm	30 d	3	3198.936	Ta	-	70 l
3204.669	U	6	6	3201.77	Ho	6	6	3198.929	Pt	3	-
3204.654	Cb	5	1 h	3201.714	Ce	50	10	3198.924	Ir I	30	10
3204.58	Se II	-	[40]	3201.68	Xe II	-	[3 h]	3198.852	Mo	6	1
3204.567	Sm II	4	2	3201.63	Dy	4	1	3198.841	W	12	10
3204.55	La II	2	2	3201.594	Ti I	12	1	3198.77	Rb	-	[60]
3204.515	Os	8	5	3201.59	V	-	10 wh	3198.76	Eu	15 w	1 h
3204.453	Ir	2	-	3201.581	W	7	20	3198.729	Ce	4	-
3204.356	Ce	15	-	3201.551	U	8	4	3198.726	Ti I	3	-
3204.348	Zr II	2	1	3201.500	Mo	1	30	3198.702	Th	9	9
3204.34	A	-	[10]	3201.499	Ru I	4	5	3198.7	Cs	-	[4]
3204.27	Ho	-	4	3201.421	Ce	10	-	3198.670	Ta	125	18
3204.27	Cs	-	[4]	3201.36	Hg	-	[5]	3198.663	Co I	60	2
3204.21	Tb	8	3	3201.29	Dy	4	1	3198.644	Yb	2	20
3204.202	Re	300	-	3201.260	Cr	1	50	3198.62	Ne II	-	[20]
3204.196	V I	20	10	3201.258	Ru	2	100	3198.582	Re	30	-
3204.160	Ce	30	-	3201.238	U	6	4	3198.55	Tb	8	-
3204.118	U	3	1	3201.226	V I	8	-	3198.485	Fe	2	1
3204.060	Ru I	8	5	3201.159	Yb	4	40	3198.470	U	4	1
3204.04	P	-	[30]	3201.121	Mn	8	-	3198.42	Yt II	3	3
3204.040	Pt I	250	100	3201.12	A I	-	[3]	3198.411	Mo	1	25
3203.950	Er	6	1	3201.105	Ce	15	-	3198.33	W	1	15
3203.881	Th	10	6	3201.09	Os	-	[4]	3198.327	Ru I	3	-
3203.87	Si	-	3	3201.06	Te	-	[5]	3198.322	U	1	2
3203.862	Ba I	2 h	-	3200.975	U	4	2	3198.266	Fe	8	6
3203.828	Ti I	40	6	3200.93	Se II	-	[8]	3198.240	Ce	5	-
3203.742	Mn	12	-	3200.894	Ag	1 h	8 h	3198.221	Cb	1	50
3203.735	Ta	3	2 h	3200.889	Mo	5	-	3198.184	In II	-	[10]
3203.726	U	8	4	3200.887	Ir I	10	5	3198.176	Th	10	10
3203.674	Hf II	5	10	3200.867	Ce	8	-	3198.154	U	5	8
3203.66	A I	-	[10]	3200.84	Ca	1	2	3198.12	Lu	40	80
3203.515	Cr	-	12	3200.784	Fe I	25	15	3198.111	Cr	40	10
3203.462	Nd	10	4	3200.782	Os	10	4	3198.097	Ir I	6	5 h
3203.435	Ti II	10	15	3200.731	W	7	6	3198.037	In II	-	[35]
3203.42	W II	5	12	3200.73	Tb	15	3	3198.012	V I	100 r	30 r
3203.406	U	8	6	3200.724	Re I	25	-	3198.01	Tb	15	3
3203.36	Er	20	12	3200.714	Pt I	100	40	3197.981	Cr	-	8
3203.353	Cb	8	5	3200.678	Zr II	3	1	3197.956	Pt II	4	20 h
3203.337	W II	4	20	3200.658	U	6	4 h	3197.904	U	12	2
3203.33	Ho	-	6	3200.625	Ce	6	-	3197.83	Ho	6	4
3203.327	Os	5	5	3200.623	Nd	8	4	3197.8	Cd	-	[8]
3203.323	Yt II	30	50	3200.59	Er	6	1	3197.678	Nd	6	-
3203.234	Th	10	6	3200.534	Cb	4	5	3197.65	Kr II	-	[4 h]
3203.223	U	8	6	3200.515	Ce	10	1	3197.592	Dy	4	2
3203.22	Ca	1	3	3200.475	Fe I	150	150	3197.578	V	1	10
3203.144	Ce	4	-	3200.423	Ni	30	-	3197.56	W	-	20
3203.14	He II	-	[100]	3200.40	Kr II	-	[50 h]	3197.518	Ti II	12	40
3203.138	Cb	-	5 wh	3200.39	A I	-	[100]	3197.517	Fe	10	8
3203.054	W	9	8	3200.378	U	5	2	3197.275	Cb	-	10 h
3203.05	Cl II	-	[20]	3200.270	Yt II	30	40	3197.200	Os	40 s	10
3203.031	Co I	40	-	3200.22	Sr I	2 h	-	3197.182	Mo	4	3
3202.951	Fe	3	2	3200.213	Mo	5	30	3197.158	Be II	-	15
3202.95	Tb	8	3	3200.135	U	15	15	3197.133	Rh I	50	10
3202.906	Ce	15	-	3200.126	Ce	2	-	3197.113	Ni I	300	-
3202.85	A I	-	[5]	3200.04	Rb	-	[10]	3197.088	Zr II	1	2
3202.834	Os	40	10	3200.039	Re I	50 w	-	3197.079	Cr II	35	30 h

3197.0—3189.5 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3197.04	Zr I	20	-	-	Ks	3194.423	Fe I	100	70	-	-	3192.0	Rn	-	-	[30]	Pe
3197.036	Ce	2	-	-	-	3194.41	Te	-	-	[10]	Bl	3191.996	Sm	8	-	2	-
3197.02	Zn II	-	[5]	-	Vs	3194.38	Yt I	8	-	-	-	3191.994	Ti I	100	20	-	-
3196.997	Fe I	150	-	-	-	3194.374	V	8	1	-	-	3191.905	Zr II	8	5	-	-
3196.98	Sb	-	5 h	-	-	3194.37	Eu	2	5 h	-	-	3191.875	Ni I	4	-	-	-
3196.930	Fe I	500	300	-	S	3194.36	Cd	-	2	-	-	3191.855	Nd	4	-	-	-
3196.926	Hf	15	1	-	-	3194.360	In II	-	-	[10]	Ps	3191.848	Ag	-	-	4 h	-
3196.92	I	-	[5]	-	Bl	3194.278	In II	-	-	[5]	Ps	3191.84	B	3	10	-	Sy
3196.9	Rn	-	[30]	-	Wo	3194.275	Cb	2 w	150 w	-	-	3191.835	Th	6	4	-	-
3196.760	He I	-	[2]	-	Ps	3194.26	Ti II	2	7	-	-	3191.80	Lu	3	60 hl	-	Me
3196.738	U	8	10	-	-	3194.25	A	-	-	[10]	Rt	3191.776	Ru	3	1	-	-
3196.591	Ru	50	2	-	-	3194.24	Yb	1	3	-	-	3191.765	U	6	6	-	-
3196.565	V	5	20	-	-	3194.234	Os	125	15	-	-	3191.659	Fe I	200	150	-	S
3196.545	Eu	8	-	-	-	3194.193	Hf II	40	40	-	-	3191.572	W	12	10	-	-
3196.54	Tm	20	10	-	Me	3194.102	Ce	15	-	-	-	3191.519	Mo	4	3	-	-
3196.431	U	6	1	-	-	3194.095	Cu I	70	60	-	-	3191.427	Cb	3	200	-	-
3196.429	Dy	2	1	-	-	3194.09	Se	-	-	[20]	Bl	3191.414	Pr	25	3	-	-
3196.370	Ta	8 w	-	-	-	3194.09	Er	9	1	-	-	3191.41	Yb	1	-	8 h	Me
3196.35	Yb	-	-	-	-	3194.008	I	-	-	[20]	Ke	3191.40	Cl	-	-	[15]	Jv
3196.29	Zn II	-	[15]	-	Vs	3193.981	Cu	2	-	-	-	3191.395	Ce	2	-	-	-
3196.22	Xe	-	[12]	-	Hu	3193.981	Ce	2	-	-	-	3191.39	Eu	5	-	5 h	-
3196.186	Sm II	20	9	-	-	3193.978	Fe	3	1	-	-	3191.39	La II	3	-	8 hl	Me
3196.184	Cb	3 h	-	-	-	3193.978	Ba I	2	-	-	-	3191.308	Yt I	10	3	-	-
3196.179	Cb	-	5	-	-	3193.973	Mo	1000 r	50 r	-	-	3191.298	Co I	35	-	-	-
3196.129	Fe	100	-	-	-	3193.967	Ir	6	-	-	-	3191.28	Ca	1	2	-	-
3196.12	Si	-	2	-	Sy	3193.95	I	-	-	[100]	Bl	3191.214	Zr I	9	2	-	-
3196.076	Fe II	10	150	-	-	3193.916	V I	100	20	-	-	3191.191	Os	20	8	-	-
3196.07	Ho	-	4 h	-	Ex	3193.91	Ba I	2	-	-	Sd	3191.187	Rh I	300	50	-	-
3196.036	Pr	15	2	-	-	3193.867	Os	40 l	10	-	-	3191.185	Ce	15	-	-	-
3195.994	Ti II	2	2 h	-	-	3193.845	Rh I	5	-	-	-	3191.167	Th	8	6	-	-
3195.966	Os	30	10	-	-	3193.802	Fe I, II	10	50	-	-	3191.156	Ta	50	5	-	-
3195.958	Mo	12	50	-	-	3193.801	Be I	2	-	-	-	3191.112	Fe	20	8	-	-
3195.936	Ce	20	-	-	-	3193.66	Dy	2	-	-	-	3191.096	Cb	100 w	300 w	-	-
3195.8	Li II	-	[3]	-	Wr	3193.6	Cs	-	-	[4]	Bs	3191.095	Th	5	3	-	-
3195.717	Ti II	5	20	-	-	3193.59	Te	-	-	[10]	Bl	3191.093	Nd	4	-	-	-
3195.713	Ce	12	-	-	-	3193.526	Hf II	25	25	-	-	3191.081	Ce	5	-	-	-
3195.691	Th	8	1	-	-	3193.48	Yt II	-	-	3 h	-	3191.036	Sm	3	1	-	-
3195.615	Yt II	30	50	-	-	3193.333	Ce	15	-	-	-	3191.03	Hg II	-	-	[100]	Ps
3195.614	Hf II	6	8	-	-	3193.311	Th	6	4	-	-	3191.024	Mo	4	-	-	-
3195.60	Tb	15	15	-	Ed	3193.308	Dy	25	5	-	-	3191.005	Sc II	3	2 h	-	-
3195.58	Yb	2	6	-	-	3193.303	Fe I	20	15	-	-	3190.97	Ho	-	-	4 h	Ex
3195.573	Ni I	125	5	-	-	3193.301	U	3	3	-	-	3190.892	U	6	6	-	-
3195.56	Ho	-	4	-	Ex	3193.29	Yt	2	7	-	-	3190.89	Pb	-	2	-	Sx
3195.550	Ce	12	-	-	-	3193.228	Fe I	100	70	-	-	3190.874	Ti II	40	200 r	-	-
3195.526	U	3	3	-	-	3193.226	U	5	10	-	-	3190.86	Ne II	-	-	[4]	Bl
3195.5	Cs	-	[4]	-	Bs	3193.202	Re	25	-	-	-	3190.833	Ce	5 w	-	-	-
3195.50	Kr II	-	[2]	-	Me	3193.193	V	1	20	-	-	3190.816	Fe	40	20	-	-
3195.479	V	-	25 h	-	-	3193.160	Co I	50	-	-	-	3190.789	Re I	30	-	-	-
3195.382	Os	100	12	-	-	3193.126	Ce	9	-	-	-	3190.72	Tb	8	-	-	Ed
3195.34	Tm	30	15	-	Me	3193.12	Te	-	-	[10]	Bl	3190.707	Nd	6	-	-	-
3195.323	Ce	5	-	-	-	3193.116	Ir	2	-	-	-	3190.703	U	12	12	-	-
3195.312	Th	8	6	-	-	3193.084	Nd	4	-	-	-	3190.678	V II	50	150 R	-	-
3195.255	U	2	1	-	-	3193.02	La II	15	60	-	-	3190.651	Fe I	50	25	-	-
3195.235	Mo	1	20	-	-	3193.004	Sm	40	10	-	-	3190.648	Dy	3	-	-	-
3195.231	Fe	6	3	-	-	3192.926	Fe II	5	-	-	-	3190.430	U	5	3	-	-
3195.21	Ba	-	4	-	-	3192.878	Yb	12	80	-	-	3190.429	Cb	-	3	-	-
3195.151	Ru	-	100	-	-	3192.802	Fe I	150	8	-	-	3190.403	Sc II	2	2	-	-
3195.12	A I	-	[5]	-	Ms	3192.797	Mo	6	2	-	-	3190.395	Ce	15	-	-	-
3195.08	Eu	4 w	-	-	-	3192.76	Tb	8	3	-	Ed	3190.342	Rh I	40	10	-	-
3195.076	W	9	5	-	-	3192.731	Sm	3	1	-	-	3190.341	Ce II	25	-	-	-
3194.977	Cb II	30	300	-	-	3192.708	V	1	20	-	-	3190.282	Gd	5	-	-	-
3194.915	V I	5	-	-	-	3192.69	Si	-	2	-	Sy	3190.232	Mo	4	4	-	-
3194.873	Mo	3	3	-	-	3192.68	Ti II	-	-	20 wh	-	3190.2	Rn	-	-	[2]	Pe
3194.853	U	-	2 h	-	-	3192.665	U	6	8	-	-	3190.173	Re	25	-	-	-
3194.852	Ir	2	-	-	-	3192.634	Er	20	12	-	-	3190.163	Ce	2	-	-	-
3194.842	Ta	1 h	40	-	-	3192.586	Th	8	1	-	-	3190.074	Th	5	4	-	-
3194.825	Ce	25	-	-	-	3192.54	Kr II	-	-	[2]	Me	3190.07	K II	-	-	[20]	Bn
3194.76	Ti II	-	40 wh	-	-	3192.505	Pt I	6	-	-	-	3190.06	Pb	-	2	-	-
3194.75	Ca	1	2	-	-	3192.503	Fe	2	1	-	-	3190.033	Sr	10	8	-	-
3194.738	Ru	4	1	-	-	3192.418	Cb	-	2	-	-	3190.016	Fe	30	10	-	-
3194.71	Au I	25	20	-	-	3192.408	Fe	12	6	-	-	3189.976	Ru I	50	50	-	-
3194.70	Tb	15	8	-	Ed	3192.392	W	6	5	-	-	3189.97	Tb	8	3	-	Ed
3194.687	La II	-	2	-	Me	3192.368	Fe I	40	1	-	-	3189.927	U	6	-	-	-
3194.683	Os	50	10	-	-	3192.26	Ti II	1	5	-	-	3189.87	Te	-	-	[5]	Bl
3194.683	Ce	5	-	-	-	3192.253	Ta	70	18 w	-	-	3189.838	Cr	-	-	10	-
3194.634	In II	-	[25]	-	Ps	3192.224	Co I	35	-	-	-	3189.783	Na II	35	-	[60]	Fr
3194.61	Ne II	-	[12]	-	Bn	3192.160	U	2	1	-	-	3189.76	Dy	4	1	-	-
3194.60	Tm	10	5	-	Me	3192.13	W II	-	10	-	-	3189.756	Co I	60	3	-	-
3194.597	Fe	60	20	-	-	3192.114	Cr I	30	2	-	-	3189.754	V	-	3	-	Me
3194.56	V I	6	-	-	-	3192.104	Mo	3	50	-	-	3189.719	La	10 w	1 h	-	-
3194.56	Ti II	2	8	-	-	3192.1	Cs	-	-	[4]	Bs	3189.718	Ru	5	5	-	-
3194.55	Rh I	50	10 h	-	-	3192.098	Th	8	5	-	-	3189.638	Ce II	30	-	-	-
3194.477	Re I	50 w	-	-	-	3192.069	Ru I	10	5	-	-	3189.625	Hf	15	1	-	-
3194.47	Hf II	6	3	-	Me	3192.064	Fe II	-	10	-	-	3189.62	I I	-	-	[5]	Bl
3194.435	In II	-	[10]	-	Ps	3192.031	Dy	3	-	-	-	3189.557	Sm II	6	2	-	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3189.52	Ti II	1	4	-	3186.744	Cr	-	30	-	3184.043	W	10	7	-
3189.459	Os	125	15	-	3186.741	W	6	5	-	3184.017	Ti	5	10	-
3189.34	Pd	-	2 h	Bx	3186.741	Fe II	20	300	-	3183.994	Ce	4	-	-
3189.335	Ir I	7	-	-	3186.63	A I	-	[5]	Ma	3183.982	V I	500 R	400 R	-
3189.296	Ru	3	-	-	3186.58	Yb	1	3	-	3183.98	W II	1	6	-
3189.282	Cb	10 w	300 r	-	3186.56	Ti II	-	[10]	El	3183.971	Th	12	5	-
3189.281	Mo	3	25	-	3186.544	Cb	5	5	-	3183.968	Ti	12	2	-
3189.28	K	-	[5]	Bn	3186.533	Os	30	8	-	3183.948	Ba I	2	-	-
3189.265	Ce	15	-	-	3186.46	Te	-	[5]	Bl	3183.916	Sm	60	40	-
3189.236	W II	10	20	-	3186.454	Ti I	150	80	-	3183.88	Tb	15	3	Ed
3189.23	Sr I	4 W	4	Sd	3186.402	Os	15	30	-	3183.85	Ho	6	6	Ex
3189.20	Cs	-	[4]	Bs	3186.386	Mo	-	25	-	3183.844	Ce	2	-	-
3189.105	Ce	2	-	-	3186.375	Dy	25	10	-	3183.81	Eu	2 h	8	-
3189.100	Ta	2 wh	4 h	-	3186.35	I	-	[5]	Bl	3183.794	Th	8	8	-
3189.078	V I	10	-	Me	3186.348	Co I	70	-	-	3183.73	Lu	3	6	Mo
3189.064	Dy	3	1	-	3186.323	U	10	-	-	3183.64	Tb	15	3	Ed
3189.048	Rh I	100	20	-	3186.291	Re	10	-	-	3183.58	I	-	[10]	Bl
3189.04	Cl II	-	[20]	Ks	3186.280	Sm	6	3	-	3183.573	Fe	5	3	-
3189.017	U	8	12	-	3186.24	P	-	[50]	Gu	3183.554	Th	8	6	-
3188.907	Ru	4	3	-	3186.23	Tb	8	3	Ed	3183.523	Ce	40	-	-
3188.85	Si	-	2	Sy	3186.19	A II	-	[3]	Rt	3183.513	W	9	6	-
3188.823	Cb	-	5 h	-	3186.126	Ce	40	-	-	3183.41	Er	15	4	-
3188.821	Fe I	150	100	-	3186.113	Ir	3	-	Ab	3183.406	V I	200 R	100 R	-
3188.787	Ce II	25	-	-	3186.044	Ru I	80	25	-	3183.325	Cr	6	150	-
3188.74	Ne II	-	[7]	Bn	3186.017	Cu II	-	3	Sh	3183.322	Mo	6 d	-	-
3188.734	Nd	10	-	-	3186.015	Sm	40	5	-	3183.302	Sm	4	2	-
3188.710	Sm II	10	4	-	3185.956	Yt I	7	2 h	-	3183.29	Tb	15	3	Ed
3188.667	Dy	5	2	-	3185.950	Co I	40	-	-	3183.251	Ni I	25	-	-
3188.609	Ru I	3	5	-	3185.886	Ir I	2 h	-	-	3183.196	Dy	7	3	-
3188.571	Fe I	150	100	-	3185.837	Sm	3	1	-	3183.16	Ba I	5	-	Sd
3188.55	Tb	8	3	Ed	3185.711	Mo	8	3	-	3183.108	Fe II	7	50	-
3188.513	V II	35	100 R	-	3185.71	U	12	10	-	3183.093	Ce	5	-	-
3188.459	Ta	2	1	-	3185.593	Rh I	100	20	-	3183.038	Ni I	5	-	-
3188.403	Mo	5	3	-	3185.563	Re I	200	-	-	3183.033	Mo	10	-	-
3188.373	Co I	100	2 h	-	3185.56	Eu	10 wh	10 wh	-	3182.975	Fe	125	70	-
3188.37	Te	-	[10]	Bl	3185.55	Cd II	-	[15]	Tk	3182.91	Cd	-	[8]	Es
3188.339	U	10	10	-	3185.51	Ti II	-	[6]	El	3182.868	Re I	100	-	-
3188.338	Ru I	60	50	-	3185.506	Ce	2	-	-	3182.858	Zr II	12	18	-
3188.307	Ce	5	-	-	3185.5	Rn	-	[10]	Pe	3182.855	W	9	8	-
3188.292	Rh I	8	-	-	3185.48	Tm	20	40	Me	3182.833	U	6	8	-
3188.188	Th	4 d	4 d	-	3185.442	Ru I	12	-	-	3182.82	Zn	-	[3]	Vs
3188.094	V I	10	-	-	3185.413	Ce	4	-	-	3182.803	Os	40	8	-
3188.094	Mo	5	3	-	3185.397	U	4	-	-	3182.798	Ir I	2	-	-
3188.078	Pt II	1	5	Sh	3185.396	V I	500 R	400 R	-	3182.675	V I	-	35	Me
3188.03	Tb	15	8	Ed	3185.327	Os	150	12	-	3182.667	Re	15	-	-
3188.026	Fe	4	10	-	3185.316	Fe II	-	25	-	3182.662	Ce	20	-	-
3188.011	Cr	150 h	60 h	-	3185.28	Si	-	3	Sy	3182.648	Th	10	10	-
3187.992	U	10	-	-	3185.247	Er	15	2	-	3182.591	V	-	35	-
3187.9	Rn	-	[10]	Pe	3185.202	W	6	5	-	3182.571	Ta	70 r	18	-
3187.88	Rh	2	4	-	3185.145	U	4	3	-	3182.57	Ti II	-	40 wh	-
3187.862	Ce	15	-	-	3185.104	Mo	20	8	-	3182.567	Os	100	15	-
3187.83	Ag	1	8 h	-	3185.088	Ag	-	4 h	-	3182.554	U	6	5	-
3187.785	Er	25	12	-	3185.075	Zr I	2	-	-	3182.447	Pr	15	3	-
3187.775	Sm	25	8	-	3185.05	W II	1	10	-	3182.42	Yt II	3	7 hl	Me
3187.764	W	8	7	-	3184.898	Th	10	10	-	3182.403	Th	10	8	-
3187.743	He I	-	[200]	IMr	3184.897	Ru I	4	-	-	3182.373	U	5	-	-
3187.74	Ti II	-	[50]	El	3184.896	Fe I	200	150	S	3182.3	Sr	5	-	Fl
3187.708	V II	35	100 R	-	3184.843	Cu II	-	8	Sh	3182.229	Os	20	8	-
3187.683	Mo	5	-	-	3184.82	P	-	[50]	Gu	3182.209	U	3	1	-
3187.680	Fe	6	2	-	3184.777	Dy	18	5	-	3182.200	Ce	15	-	-
3187.676	Dy	25	10	-	3184.764	U	3	1	-	3182.175	Cu II	-	5	Sh
3187.669	Ce	20	-	-	3184.754	Re I	150	-	-	3182.123	Co I	80	2 h	-
3187.61	Kr II	-	[4]	Me	3184.721	Ce	10	-	-	3182.07	I	-	[10]	Bl
3187.6	Bi	-	2 h	Wt	3184.622	Fe I	60	40	-	3182.061	Fe	80	80	-
3187.60	Ne II	-	[4]	Bn	3184.622	Ce	12	-	-	3181.985	Mo	4	3	-
3187.592	Mo	1	50	-	3184.59	Pd II	-	2	Bx	3181.948	Ce	10	-	-
3187.513	U	3	1	-	3184.572	Mo	6	4	-	3181.940	Dy	10	5 h	-
3187.493	Cb	12	10	-	3184.552	Ta	70	18	-	3181.923	Er	18	5	-
3187.42	Cl II	-	[5]	Ks	3184.415	W	10	9	-	3181.922	Zr II	6	4	-
3187.41	Tm	10	25	Me	3184.41	Ba	3	-	-	3181.908	Fe	15	15	-
3187.408	Th	4	2	-	3184.406	U	6	2	-	3181.879	Os	100	12	-
3187.37	Ho	-	4	Ex	3184.402	Mo	3	1	-	3181.855	Fe	15	15	-
3187.335	Os	80	12	-	3184.367	Ni I	150	3	-	3181.85	Se	-	[8]	Bl
3187.293	Fe II	-	60	-	3184.341	Cr	-	30	-	3181.84	Ti II	-	50 wh	-
3187.25	Tb	15	15	Ed	3184.337	Os	10	5	-	3181.840	Ce	4	-	-
3187.213	Sm II	15	8	-	3184.330	Ce	2	-	-	3181.833	U	3	1	-
3187.163	Fe	5	1	-	3184.223	Cb	5	150	-	3181.812	W	12 l	12	-
3187.133	Ir I	2 h	-	-	3184.22	Eu	10 W	-	-	3181.756	Hf II	4	2	-
3187.13	W	-	20	-	3184.212	Ce II	20	-	-	3181.740	Ni I	50	1 h	-
3187.03	In	-	12	Sq	3184.205	Dy	2	1	-	3181.70	Cl II	-	[7]	Ks
3187.006	Sm II	15	8	-	3184.194	Sm	3	-	-	3181.692	Ta	7	18 d	-
3187.002	Th	10	8	-	3184.15	Ag II	-	20	-	3181.68	Er	5 d	2 h	-
3187.00	Eu	6	2	Kn	3184.13	Ho	-	4 h	Ex	3181.672	Th	6	-	-
3186.980	Os	100	15	-	3184.107	Fe	5	2	-	3181.61	Ag	2	3	-
3186.858	V	1	10	-	3184.09	Ti II	3	10	-	3181.592	Ce	15	-	-

3181.5—3173.5A.

Wave-length	Element	Intensity Arc	Intensity Spk., [Dis]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis]	R
3181.576	Zr II	9	6	-	3179.037	U	10	6	-	3175.989	Fe	12	5	-
3181.52	Ho	8	40	Ex	3179.026	Dy	3	-	-	3175.987	La I	15	3	-
3181.520	Fe	80	70	-	3179.002	Pt	1	8	Sh	3175.987	Nd	8	2	-
3181.516	Nd	-	2	-	3178.967	Fe	30	15	-	3175.945	W II	8	20	I
3181.44	Ga	-	2	KI	3178.925	Nd	6	-	-	3175.850	Cb	5	50	-
3181.428	Cr II	15	40	-	3178.908	U	1	5	-	3175.84	Mg II	5	-	FI
3181.399	Cb	5	20	-	3178.869	Mo	-	4	-	3175.830	Sm	1	2	-
3181.39	Xe II	-	[3 h]	Hu	3178.785	Th	5	5	-	3175.785	Cb	1	20	-
3181.388	Sm	2	-	-	3178.778	Cr	-	10	-	3175.75	Yb	1	5	-
3181.378	Ce	3	-	-	3178.77	Pd II	-	10	Ex	3175.737	U	4	1	-
3181.373	U	6	2	-	3178.754	Ce	15	-	-	3175.730	Th	12	15	-
3181.28	Eu	4	5 h	-	3178.733	Ru I	30	-	-	3175.716	Ce	8	-	-
3181.275	Ca II	8	15	IWg	3178.689	Ir	10	10	-	3175.714	Mn	8	-	-
3181.26	Cl II	-	[5]	Ks	3178.630	Cb	2	5 wh	-	3175.683	Cb	1	20	-
3181.25	Kr	-	[5 wh]	Me	3178.630	Ti II	-	25 wh	-	3175.67	Kr II	-	[40 wh]	Me
3181.222	Rh I	10	-	-	3178.612	Re I	30	-	-	3175.66	Ti II	-	20 wh	-
3181.22	Tb	8	-	Ed	3178.61	Cs	-	[10]	Bs	3175.648	Os	20	8	-
3181.192	Ce	4	-	-	3178.546	Fe	10	-	-	3175.64	Xe	-	[40]	Hu
3181.189	Th	10	10	-	3178.54	Zn II	-	[2]	Vs	3175.6	Rn	-	[40]	Wo
3181.187	Ru I	4	-	-	3178.495	Mn	150	50	-	3175.587	Mo	5	3	-
3181.173	Mo	-	8	-	3178.492	Re	15	-	-	3175.581	Ce	2	-	-
3181.153	Hf	10	1	-	3178.485	Ce II	12	-	-	3175.53	Mo	5	1	-
3181.080	U	2	1	-	3178.443	Sm	4	2	-	3175.52	Er	10	2	-
3181.05	A	-	[25]	Rt	3178.41	Rh I	15	-	-	3175.45	Tb	8	3	Ed
3181.012	Hf	10	2	-	3178.373	Dy	20	5	-	3175.447	Fe I	200	200	S
3180.947	Ta	100	35	-	3178.320	U	6	4	-	3175.358	U	8	-	-
3180.912	Yb	2	30	-	3178.266	Ta	15	7	-	3175.30	Cl II	-	[6]	Ks
3180.824	Ce	20	-	-	3178.244	Th	8	1	-	3175.298	Ru	30	40	-
3180.755	Fe I	100	100	-	3178.243	W	7	3	-	3175.25	Xe	-	[3]	Hu
3180.739	W	10	10	-	3178.243	Ce	3	-	-	3175.147	Ru	20	100	-
3180.71	Ag	2 h	15	-	3178.240	Os	80	10	-	3175.14	P II	-	[70]	Gu
3180.701	Cr II	30	150	-	3178.20	Se	-	[12]	Ro	3175.11	Te I	30	[15]	Bl
3180.585	U	3 h	2 h	-	3178.20	Tm	10	15	Me	3175.088	Na II	-	[15]	Fr
3180.559	V I	3	1	-	3178.164	Ta	18	3	-	3175.080	Fe II	-	2	-
3180.54	Tb	30	3	Ed	3178.119	Sm II	10	5	-	3175.059	Ce	10	-	-
3180.516	Ca I	20	-	-	3178.107	Ce	15	-	-	3175.049	Mo	2	60	-
3180.444	Ru	3	-	-	3178.087	Zr II	8	8	-	3175.047	I II	-	[10]	Ke
3180.43	Cl II	-	[7]	Ks	3178.065	Os	150	20	-	3175.035	Fe	1	-	-
3180.354	Ir I	25	1	-	3178.02	W II	8 d	20	-	3175.03	In	-	3	-
3180.305	Sm	8	1	-	3178.015	Fe I	300	150	S	3175.019	Sn I	500 h	400 hr	-
3180.299	W	6	5	-	3177.933	Ta	20	3	-	3174.96	Fe	5	4	-
3180.290	Cb	5	200	-	3177.902	Mo	5	-	-	3174.905	Co I	80	-	-
3180.283	Co I	10	-	-	3177.88	Dy	30	5	-	3174.883	Dy	12	4	-
3180.226	Fe I	300	300	-	3177.874	Th	5	4	-	3174.88	La II	3	10 hl	Me
3180.225	Ti II	-	20 wh	-	3177.840	Sm	8	4	-	3174.86	Ho	6	6	Ex
3180.199	Th	15	15	-	3177.762	Cb	1	3	-	3174.843	U	6	-	-
3180.174	Ir I	6	-	-	3177.715	Re	80	-	-	3174.824	Pt I	2	-	-
3180.164	Fe II	10	15	Do	3177.683	V	-	20	-	3174.80	Ti II	-	100	-
3180.012	Cd II	-	2	-	3177.677	Fe	2	1	-	3174.780	Re	20 w	-	-
3179.975	W	6 d	20	-	3177.620	Ce	2	-	-	3174.76	Yb	2	4	Me
3179.84	Tb	8	-	Ed	3177.582	Ir I	25	2	-	3174.672	Mo	4	1	-
3179.827	U	12	10	-	3177.535	Fe II	5	300	-	3174.66	Tb	15	15	Ed
3179.793	Cu II	-	3	Sh	3177.531	Dy	7	3	-	3174.651	Mn	15 h	-	-
3179.78	La I	8	2	-	3177.53	Tb	8	3	Ed	3174.619	Re I	30	-	-
3179.774	Mo	6	5	-	3177.46	Tm	30	20	Me	3174.539	V	1	80	-
3179.746	Zr I	2	-	-	3177.389	Os	10	5	-	3174.526	Pt	-	2	Sh
3179.729	Rh I	50	-	-	3177.331	U	15	18	-	3174.508	Sm	3	1	-
3179.61	Er	4	4	-	3177.273	Co	100	-	-	3174.489	Cd II	-	2	-
3179.542	Ta	15 h	2 h	-	3177.210	W II	8 d	25	-	3174.460	Th	8	5	-
3179.507	Fe II	-	6	-	3177.198	Th	10	8	-	3174.44	Cb	-	10 h	-
3179.476	Ir I	2	-	-	3177.137	Ce	20	-	-	3174.378	Ta	3	1	-
3179.45	Cr	-	10	-	3177.092	Rh	15	-	-	3174.166	Th	10	10	-
3179.425	W II	6	12	-	3177.049	Ru	60	200	-	3174.140	Co I	20	-	-
3179.418	Yt II	20	30	-	3177.049	Mn	8	-	-	3174.131	Ru	50	3	-
3179.415	V	1	25	-	3176.964	U	3	2	-	3174.079	V	5	35	-
3179.410	Pd I	15	1 h	-	3176.96	Ho	6	4 h	Ex	3174.077	Ce	15	-	-
3179.378	U	8 r	6 h	-	3176.94	Kr II	-	[15 wh]	Me	3173.944	U	5	5	-
3179.351	B II	5	100	-	3176.856	Hf II	30	30	-	3173.926	Os	80	30	-
3179.341	Ce	5	-	-	3176.814	Mo	5	5	-	3173.865	Pd II	-	2	-
3179.338	Th	5	2	-	3176.799	Ce	30	-	-	3173.79	Ho	6	10	Ex
3179.332	Ca II	100	400 w	IWg	3176.74	Tb	8	3	Ed	3173.78	Yb	1	6	-
3179.322	Mo	6	-	-	3176.626	U	2	2	-	3173.777	Mo	1	20	-
3179.32	Hg	-	-	Cn	3176.590	W	12 d	10 d	-	3173.76	Tb	15	2	Ed
3179.291	Ti I	10	2 h	-	3176.54	Pb I	-	100	KI	3173.706	U	6	6	-
3179.283	Cr	100	10 h	-	3176.507	Th	10	6	-	3173.691	Ba I	3	-	-
3179.264	Ru	50	50 r	-	3176.475	In II	-	[5]	Ps	3173.687	Fe	20	20	-
3179.259	Os	20	4	-	3176.363	Fe I	20	10	-	3173.66	Cl II	-	[20]	Ks
3179.24	Ag	2	15 h	Fn	3176.33	Mo	-	50	-	3173.622	Ce	15	-	-
3179.233	Cb	2	10	-	3176.309	In II	-	[10]	Ps	3173.614	Fe	20	20	-
3179.201	Ir I	12	2 h	-	3176.294	Ta	70	18	-	3173.613	Cd	-	2	-
3179.148	Pr	10	1	-	3176.292	Ni I	4	-	-	3173.601	Eu	35	1	-
3179.14	Ag	2	2	-	3176.292	Ru	50	3	-	3173.59	Ag	3	5 h	-
3179.056	W	10	8	-	3176.208	U	20	15	-	3173.586	Ta	70	10	-
3179.055	Na II	6	[40]	Fr	3176.16	Ne II	-	[7]	Bn	3173.58	Ne II	-	[7]	Bl
3179.047	Th	10	10	-	3176.112	In II	-	[18]	Ps	3173.58	Tm	50	100	Me

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
3173.565	Cr	— 25	—	3170.92	Dy	5 —	—	3168.060	Co I	100 —	—
3173.5	Pb II	[2]	Ea	3170.855	U	10 8	—	3168.02	I	— [18]	Bl
3173.497	U	6 1	—	3170.746	Dy	10 3	—	3167.95	C II	— 12	Fl
3173.443	Ta	15 3	—	3170.715	Ni I	4 —	—	3167.922	Fe	100 30	—
3173.427	Th	8 1	—	3170.63	Kr II	— [2]	Me	3167.918	Co II	12 —	—
3173.412	Fe	20 10	—	3170.579	Ag	5 3	—	3167.89	Ho	— 4	Ex
3173.399	Ru	30 —	—	3170.538	U	3 3	—	3167.87	Ca	1 2	Ad
3173.337	Ir I	2 —	—	3170.528	Ce	10 4	—	3167.859	Fe II	2 100	—
3173.235	Ce	4 —	—	3170.429	Th	10 4	—	3167.790	Ce	4 —	—
3173.229	U	4 —	—	3170.38	Eu	15 1	—	3167.784	U	3 1	—
3173.214	Th	8 4	—	3170.347	Mo	1000 R 25 r	—	3167.771	Dy	2 1 h	—
3173.200	Cb	2 100	—	3170.346	Fe II	10 50	—	3167.725	Mo	1 20	—
3173.196	Os	100 15	—	3170.289	Ta	250 w 35	—	3167.594	Re	3 —	—
3173.110	Ru I	30 —	—	3170.26	Pd II	— 50 wh	Sh	3167.581	W	10 9	—
3173.091	Re	25 —	—	3170.23	Cl II	— [15]	Ks	3167.568	Ne I	— [50]	Ps
3173.09	I	— [10]	Bl	3170.204	V	— 3	Me	3167.529	Ta	35 3	—
3173.052	Yt II	20 70	—	3170.203	Sm II	15 5	—	3167.52	Tb	15 8	Ed
3172.96	A I	[150]	Ms	3170.201	W	15 9	—	3167.487	Na II	— [5]	Fr
3172.942	Hf	30 8	—	3170.160	Cb	2 3	—	3167.467	Ru	5 100	—
3172.874	Ta	50 25 h	—	3170.12	I II	— [5]	Mu	3167.446	Hf II	2 1	—
3172.837	Yt I	3 3	—	3170.093	Ru	30 —	—	3167.436	V	5 150 R	—
3172.82	Tm	200 200	Me	3170.09	U	2 2	—	3167.42	Dy	10 d 2	—
3172.800	Os	8 5	—	3170.069	Ce	12 —	—	3167.378	Ru I	3 —	—
3172.792	Ir I	25 1	—	3170.015	Nd	10 —	—	3167.33	Lu	1 15 hl	Me
3172.79	Mg II	4 —	Fl	3169.989	U	6 3	—	3167.324	Ce II	15 1	—
3172.742	Mo	3 50	—	3169.978	Dy	100 50	—	3167.226	Ce	15 —	—
3172.731	Ti I	12 3	—	3169.958	Mo	— 20	—	3167.203	Ir I	12 1	—
3172.672	Ru	20 15	—	3169.928	W	10 15	—	3167.157	Re I	20 —	—
3172.64	Er	7 1	—	3169.89	Tm	15 40	Me	3167.103	Er	15 3	—
3172.600	U	5 2	—	3169.870	Sm II	25 8	—	3167.098	U	10 10	—
3172.56	Cs	— [10]	Bs	3169.854	Ca I	10 2 h	Cw	3167.03	Mo	— 20	—
3172.56	Cl II	— [6]	Ks	3169.84	Tb	30 8	Ed	3166.95	Rh	2 3	—
3172.541	Ce	3 —	—	3169.80	K II	— [10]	Bn	3166.932	U	3 1	—
3172.510	Cb	3 3	—	3169.767	Co	100 —	—	3166.93	Sm	4 4	—
3172.503	Th	8 5	—	3169.73	Cs	— [4]	Bs	3166.904	Re	8 —	—
3172.370	Mo	5 20	—	3169.7	Rn	— [30]	Pe	3166.749	Ir I	8 1	—
3172.314	Pr	25 5	—	3169.681	Cu I	50 20	—	3166.743	W	7 2	—
3172.303	Cb	2 2	—	3169.68	A	— [50]	Rt	3166.699	Fe II	— 3	—
3172.299	Ce II	20 —	—	3169.615	Fe	2 2	—	3166.62	Ho	10 15	Ex
3172.27	Rh I	25 —	—	3169.613	Sm	3 —	—	3166.608	Ce	20 —	—
3172.26	Cb	— 3 h	—	3169.584	Cr I	25 2	—	3166.574	Cu II	— 2 h	—
3172.24	Ag	2 h 4 h	—	3169.553	Dy	5 1 h	—	3166.557	Ce	5 —	—
3172.228	V	— 25	Me	3169.474	Gd	2 2	—	3166.539	Ru	3 35	—
3172.2	Sr	5 —	Fl	3169.45	Cl II	— [7]	Ks	3166.512	Os	200 20	—
3172.18	Zn II	— [12]	Vs	3169.43	Rb	— [15]	Ok	3166.50	Eu	18 w 1 h	—
3172.18	A I	— [5]	Ms	3169.396	Ce	3 —	—	3166.473	Re I	8 —	—
3172.103	Th	5 d 3 d	—	3169.367	Pr	12 1	—	3166.438	Fe	100 80	—
3172.079	Cr	2 200	—	3169.294	U	2 1	—	3166.377	Ta	2 r 35	—
3172.067	Fe I	100 100	—	3169.29	Er	7 1	—	3166.341	Ir	4 —	—
3172.058	U	6 3	—	3169.279	Th	12 10	—	3166.26	La II	3 3	Me
3172.026	Mo	2 25	—	3169.192	Cr	2 50	—	3166.256	Zr II	5 5	—
3171.939	Eu	10 1	—	3169.183	Ce	30 —	—	3166.249	Fe	5 3	—
3171.90	Tb	8 3	Ed	3169.165	Mo	4 1	—	3166.243	Ce II	20 —	—
3171.84	P	— [50]	Gu	3169.058	Yb	2 20	—	3166.131	U	2 h —	—
3171.81	K II	— [5]	Bn	3168.98	Mg II	8 —	Fl	3166.104	Ru	8 40	—
3171.79	Cb	— 25 h	—	3168.967	W	8 7	—	3166.054	Th	10 6	—
3171.75	Ca	1 h 2	Ad	3168.95	Dy	6 —	—	3165.99	C II	— 2	En
3171.738	V	— 30	Me	3168.880	Ir I	25 2	—	3165.974	Zr II	10 12	—
3171.71	Ho	10 15	Ex	3168.857	Fe	30 15	—	3165.94	Mg II	5 —	Fl
3171.668	La	2 h 1000 wh	—	3168.82	Tm	15 10	Me	3165.887	V	1 80	—
3171.667	Yt	6 2 h	—	3168.726	Mo	— 20	—	3165.861	Fe I	100 80	—
3171.665	Th	5 d 1 d	—	3168.67	Xe II	— [2 h]	Hu	3165.822	Th	10 5	—
3171.663	Fe I	30 10	—	3168.621	Ce	25 —	—	3165.803	Rh	2 —	—
3171.663	Cu I	7 —	—	3168.598	Cb	2 2	—	3165.8	Rn	— [5]	Pe
3171.616	Os	10 5	—	3168.59	Tb	8 3	Ed	3165.78	Ca	1 h 2	Ad
3171.613	Ce I, II	20 —	—	3168.58	Dy	2 2 h	Ed	3165.78	Si	— 7	Sy
3171.53	Re	3 —	—	3168.525	Ru	100 25 r	—	3165.74	Tb	15 8	Ed
3171.518	Er	6 2	—	3168.521	Ti II	70 300 r	—	3165.72	I	— [10]	Bl
3171.465	Ce	2 —	—	3168.432	U	5 4	—	3165.70	Ne II	— [12]	Bn
3171.45	Sb	— [6]	Lg	3168.417	Sb	— [12]	Lg	3165.67	Ho	— 4 h	Ex
3171.428	Cb	5 10 w	—	3168.41	Yb	— 2	—	3165.659	Os	20 20	—
3171.40	Zn II	— [3]	Vs	3168.390	Hf	30 2	—	3165.60	Ba I	2 2	Sd
3171.375	Mo	5 4	—	3168.384	Re I	150 w —	—	3165.598	V I	4 4	—
3171.36	Dy	5 —	—	3168.32	Tb	8 3	Ed	3165.579	Th	10 4	—
3171.36	Lu	40 5	Me	3168.282	Eu	10 —	—	3165.51	C II	— 20	Fl
3171.353	Fe I	100 80	—	3168.281	Os	100 15	—	3165.508	Ni I	15 —	—
3171.281	Th	8 1	—	3168.242	Pr	25 5	—	3165.505	U	10 8	—
3171.239	Ru	20 —	—	3168.239	Ru I	40 —	—	3165.446	Zr II	6 4	—
3171.19	Tb	8 3	Ed	3168.205	U	4 h 1	—	3165.376	W	10 10	—
3171.188	Yb	2 4	—	3168.19	Tm	25 60	Me	3165.31	A	— [5]	Rt
3171.168	Cb	2 3	—	3168.183	Ta	— 70	—	3165.282	U	6 18	—
3171.052	U	3 2	—	3168.178	Ir I	20 2	—	3165.27	Xe II	— [4]	Hu
3170.987	Re	4 w —	—	3168.151	Fe	10 3	—	3165.21	Yb	2 15	—
3170.97	Eu	6 10	—	3168.138	V II	12 40	—	3165.195	Ir I	3 —	—
3170.925	Ti I	8 1	—	3168.12	Dy	6 2 h	—	3165.19	La II	—	Me

3165.0—3157.3 Å.

Wave-length	Element	Intensities	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensities	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensities	Arc	Spk., [Dis.]	R
3165.057	U	3	2	—		3162.34	P	—		[50]	Gu	3159.526	U	4	2	—	
3165.006	Fe I	100	60	—		3162.335	Fe I	70	50	—		3159.522	Ir I	7	1	—	
3164.985	Pr	8	1	—		3162.30	Yb	2	—	—		3159.521	Ni I	10	—	—	
3164.948	Ru	3	70	—		3162.288	Sm	7	3	—		3159.419	W	4	3	—	
3164.94	Kr II	—	[3 whl]	Me		3162.260	Rh I	2	2	—		3159.39	Tb	15	—	Ed	
3164.910	Ti	1	50	—		3162.214	Zr II	15	15	—		3159.378	Ce	3	—	—	
3164.9	Au II	—	8 h	Ex		3162.148	Sm II	6	3	—		3159.364	V	1	40	—	
3164.87	Tm	20	10	—		3162.00	Mo	3	1	—		3159.356	Os	20	5	—	
3164.866	Re	3	—	—		3161.949	Fe I	200	150	—		3159.343	Mo	20	5	—	
3164.828	V II	10	100	—		3161.947	Pd II	—	100 h	—		3159.330	U	2	2 h	—	
3164.826	U	3	1	—		3161.852	Ta	3	1	—		3159.325	Cb	2	3	—	
3164.823	Pr	10	3	—		3161.85	Cd II	2	3	—		3159.311	Fe I	15	—	—	
3164.81	Eu	5 w	1 h	—		3161.822	Ir I	7	1	—		3159.31	Te	—	[10 h]	Bl	
3164.77	Tb	8	3	—		3161.783	U	5	3	—		3159.309	Dy	4	—	—	
3164.643	U	5	3	—		3161.774	Ti II	35	150	—		3159.25	Rh	5	10	—	
3164.618	Ca I	5	3	Cw		3161.771	Sm	3	1 h	—		3159.23	Mo	—	25	—	
3164.612	Os	60	12	—		3161.728	Os	100	10	—		3159.216	Nd	6	4	—	
3164.54	V	4	—	—		3161.693	Th	10	8	—		3159.184	W	10	10	—	
3164.53	Er	7	2	—		3161.654	Co I	60	—	—		3159.149	Ir I	50 r	2 h	—	
3164.526	Mo	10	10	—		3161.62	Lu	—	10 hl	Me		3159.117	Zr II	2	2	—	
3164.520	Re I	30	—	—		3161.556	Fe	2	1	—		3159.105	Cr II	4	25	—	
3164.46	Ne II	—	[7]	Bn		3161.528	U	8	6	—		3159.080	Pt II	3	15	Sh	
3164.442	W	10	8	—		3161.47	I	—	[5]	Bl		3159.072	Ce	8	—	—	
3164.44	Xe	—	[2]	Hu		3161.45	A	—	[3]	Rt		3159.049	Ta	25 w	3	—	
3164.437	Th	10	10	—		3161.445	Os	80	12	—		3159.023	Fe	7	3	—	
3164.42	Cd II	—	[2]	Tk		3161.442	Ta	7	2	—		3158.944	Mo	2	10	—	
3164.418	U	2	1	—		3161.44	Cl II	—	[20]	Ks		3158.89	U	3 d	4 d	—	
3164.310	Zr II	10	8	—		3161.38	A II	—	[5]	Rt		3158.889	Ru I	60	12	—	
3164.299	Fe I	20	10	—		3161.379	Gd	30	30	—		3158.882	Ce	5	—	—	
3164.23	Xe II	—	[4]	Hu		3161.371	Fe I	80	60	—		3158.871	Th	4	1 h	—	
3164.166	Ni I	4	—	—		3161.37	Er	18	3	—		3158.869	Ca I	100	300 w	IWg	
3164.154	Ce II	40	—	—		3161.357	Ir I	6	1 h	—		3158.833	Cr	6	1	—	
3164.151	U	5	12	—		3161.312	V	1	50	—		3158.812	Ce	15	—	—	
3164.10	Tb	8	3	—		3161.205	Ti II	30	125	—		3158.806	W	7	6	—	
3164.041	Dy	3	1	—		3161.11	Rb II	—	[2]	Ok		3158.775	Co I	150 r	—	—	
3164.03	Ho	—	4 h	Ex		3161.071	Th	5	1	—		3158.740	Mn	8	—	—	
3163.923	Cr	—	10	—		3161.039	Mn	150	50	—		3158.66	Tb	8	—	Ed	
3163.905	V I	10	—	—		3161.028	Dy	10	5	—		3158.646	Pr	12	2	—	
3163.905	Mo	10	20	—		3161.026	Ce	15	—	—		3158.62	Cu II	—	2	—	
3163.874	Fe	40	25	—		3160.95	I	—	[5]	Bl		3158.612	Th	10	4	—	
3163.87	Ir	—	2	—		3160.917	Fe	5	4	—		3158.6	C	—	[6]	Jn	
3163.87	P	—	[50]	Gu		3160.886	Sm	2	1	—		3158.542	Sc	2	—	—	
3163.85	Tb	15	3	—		3160.821	Th	6	3	—		3158.54	B	5	2	Sy	
3163.828	Ru	10	—	—		3160.814	Cd	2	1	—		3158.526	U	1	4	—	
3163.825	Ta	40	5	—		3160.808	Ta	2 h	1	—		3158.514	Ba I	2	—	—	
3163.80	Yb	2	18	—		3160.780	V	1	30	Me		3158.511	Fe	1	—	—	
3163.76	V	—	25	Me		3160.660	Gd	2	1	—		3158.434	Ce	20	—	—	
3163.756	Cr	40	25	—		3160.658	Fe I	150	125	S		3158.40	Ag	3	1 h	—	
3163.735	Pr	4	—	—		3160.63	Te	—	[25]	Bl		3158.400	Fe	6	3	—	
3163.731	Na II	35	[60]	Fr		3160.56	La II	3	3 h	Me		3158.396	In II	—	[100]	Ps	
3163.727	U	8	6	—		3160.52	Cl II	—	[10]	Ks		3158.315	Re I	200	—	—	
3163.545	Ta	15 s	3	—		3160.499	Dy	10	3	—		3158.30	Yb	2	18	—	
3163.418	W	12	15 l	—		3160.498	Mo	3	2	—		3158.262	Ce	2	—	—	
3163.402	Cb II	15	8	—		3160.427	Os	20	8	—		3158.23	Te	—	[10 h]	Bl	
3163.391	Sm II	5	2	—		3160.35	Er	20	2	—		3158.201	U	2	1	—	
3163.345	Ce	15	—	—		3160.344	Fe	40	20	—		3158.18	Ga II	—	2	—	
3163.288	Mo	4	3	—		3160.306	Ce	5	—	—		3158.165	Mo	300 R	30 r	—	
3163.272	Ba	—	2 h	—		3160.286	Os	30	10	—		3158.163	Fe	—	3	—	
3163.184	Ru	12	100	—		3160.283	U	1	3 h	—		3158.105	Rb I	8	—	—	
3163.146	Cb	1	4	—		3160.280	Ce	4	—	—		3158.102	Cb	1	5	—	
3163.128	Ta	70 r	35	—		3160.200	Fe	70	50	—		3158.024	Cr	1	35	—	
3163.098	Fe II	1	10	—		3160.179	Th	8	4	—		3158.01	Tb	8	—	Ed	
3163.021	V	5	30	—		3160.145	Mn	5	—	—		3157.98	Fe I	10	6	—	
3162.996	Ce	8 h	—	—		3160.12	Mo	—	15	—		3157.955	Ta	3 r	50	—	
3162.980	U	3	2	—		3160.12	Tb	8	—	Ed		3157.902	V	2	40	Me	
3162.93	Tb	15	8	Ed		3160.097	Cr	—	10	—		3157.887	Fe I	100	100	—	
3162.93	Xe II	—	[12]	Hu		3160.06	A I	—	[5]	Ms		3157.859	U	10	15	—	
3162.86	Pd II	—	4	Ex		3160.047	Cu I	12	2 h	Hs		3157.841	Sm	7	3	—	
3162.836	Th	10	10	—		3160.020	W II	9	30	—		3157.823	Zr I	10	1	—	
3162.835	Ce	4	—	—		3159.948	Mn	12	—	—		3157.8	Rn	—	[10]	Pe	
3162.824	Ir	2	—	—		3159.944	U	6	1	—		3157.73	P II	—	[15]	Gu	
3162.824	Dy	80	60	—		3159.93	Hf II	5	1	Me		3157.718	Ce	8	—	—	
3162.819	U	3 h	4 h	—		3159.923	Ru I	70	25	—		3157.711	Re	2	—	—	
3162.800	Fe II	1	100	—		3159.872	V	2	1 h	—		3157.668	Ti I	3	—	—	
3162.739	Ir	2	—	—		3159.856	Ir I	2	—	—		3157.648	Ta	1 h	18	—	
3162.724	Ta	70	7	—		3159.853	Cb	1	10	—		3157.627	Ru	30	—	—	
3162.713	V	5	30	—		3159.845	Cr	—	6	—		3157.58	La II	2	2	Me	
3162.632	Nd	6 d	2	—		3159.823	Hf	20	2	—		3157.57	Rh I	6	—	Bv	
3162.611	Hf II	40	30	—		3159.817	U	8	15	—		3157.56	Rb I	20	—	—	
3162.606	Mo	2	20	—		3159.8	Rn	—	[18]	Pe		3157.549	Dy	8	1 h	—	
3162.570	Ti II	50	200 r	—		3159.75	Xe II	—	[4 h]	Hu		3157.494	Ir I	6	—	—	
3162.44	Tm	15	40	Me		3159.714	Ce	4	—	—		3157.451	Fe	10	5	—	
3162.436	Cr	25	—	—		3159.67	Ho	6	—	Ex		3157.446	U	8	10	—	
3162.42	Tb	15	3	Ed		3159.665	Co I	100	2 h	—		3157.419	Ru	30	1	—	
3162.357	V	—	20	—		3159.59	Cr	60 wh	20 h	—		3157.399	Ce	5 w	—	—	

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3157.397	Ti II	8	35	-	3154.69	Tb	8	3	Ed	3151.870	Cb	5	2	-
3157.34	Tm	200	150	Me	3154.678	Co	100	-	-	3151.869	Fe I	40	15	-
3157.328	Mo	-	20	-	3154.673	Cd	3	-	-	3151.86	Rb	-	[2]	Ok
3157.29	Eu	15	-	Kn	3154.585	Ni I	4	-	-	3151.651	U	6	3	-
3157.238	Os	100	2	-	3154.551	Ir I	20	1	-	3151.648	Th	10	10	-
3157.203	Dy	4	1 h	-	3154.55	Cs	-	[4]	Bs	3151.633	Re I	150 w	-	-
3157.178	I	-	[5]	Ke	3154.506	Ce II	15	-	-	3151.630	Mo	2	40	-
3157.151	Fe	4	3	-	3154.504	Fe	20	5	-	3151.629	Hf	20	1	-
3157.15	K II	-	[5]	Bn	3154.487	Ta	15 l	3	-	3151.627	Ir	2	1 h	-
3157.111	Cd II	-	2	-	3154.434	Ru	30	-	-	3151.62	Cu I	7	-	-
3157.040	Fe I	150	100	S	3154.409	U	6	3	-	3151.565	W II	4	10 l	-
3156.996	Zr II	10	5	-	3154.360	Sm II	3	1	-	3151.539	Pr	10	3	-
3156.96	Ho	6	6	Ex	3154.286	Er	15	5	-	3151.52	A I	-	[3]	Ms
3156.881	V I	1	2	-	3154.26	Th	15	12	-	3151.487	Sm	5	3	-
3156.846	Mo	1	30	-	3154.24	Te	-	[5]	Bl	3151.46	Te	-	[15]	Bl
3156.822	Ca	-	2	-	3154.22	Ho	-	4	Ex	3151.44	Yb	-	2	-
3156.817	Ru I	50	-	-	3154.206	Fe II	-	400	-	3151.363	Rh	80	2	-
3156.775	Ce	20	-	-	3154.195	Ti II	20	100	-	3151.351	Fe	300	150	-
3156.775	Os	100	3	-	3154.175	W II	5	2 h	-	3151.322	V	8 w	150 w	-
3156.763	Ta	1	35	-	3154.107	Cr	-	5	-	3151.29	W	5	20	-
3156.761	U	3	1	-	3154.005	Ce	5	-	-	3151.280	Ca I	6	2	Cw
3156.627	Cu I	50	15	-	3153.987	Cb	2	-	-	3151.259	Ni	6	-	-
3156.626	Hf	20	3	-	3153.926	Ta	1	15	-	3151.168	Re	25	-	-
3156.592	U	5	5	-	3153.88	Yb	3	30	-	3151.16	Ne II	-	[4]	Bn
3156.588	Au II	-	10	-	3153.88	Cs	-	[6]	Bs	3151.14	Cs	-	[6]	Bs
3156.565	Pt I	150	50	-	3153.853	Cb	1	20	-	3151.127	Ce	25	-	-
3156.539	Gd	25	25	-	3153.833	Pr	12	2	-	3151.084	U	10	4	-
3156.52	Dy	50	20	-	3153.823	Ru	60	12	-	3151.049	Cu II	2	5	Sh
3156.52	Tb	8	3	Ed	3153.80	A II	-	[5]	Rt	3151.035	Tm	200	200	Me
3156.513	Mo	8	-	-	3153.787	Re I	80	-	-	3151.005	Fe	2	2	-
3156.458	Fe	3	2	-	3153.748	Fe	40	15	-	3150.999	Ir	3	-	-
3156.422	Ce	5	-	-	3153.611	Os	125	20	-	3150.93	Kr II	-	[80 h]	Me
3156.395	Th	12	10	-	3153.601	Ti	8	2	-	3150.86	Se	-	-	Bl
3156.274	Fe	125	100	-	3153.549	V	5 h	-	-	3150.85	Ta	5 w	35 w	-
3156.259	Nd	8	-	Kn	3153.498	U	6	4	-	3150.819	Co	7	-	-
3156.248	Os I	500 R	15 wh	-	3153.492	F II	-	[20]	Di	3150.738	Ca I	50	2	IWg
3156.222	V	15	5	-	3153.474	Ce	8	-	-	3150.727	Ir	5	-	-
3156.18	Ho	6	4	Ex	3153.404	Ne I	-	[50]	Ps	3150.706	U	3 w	2 h	-
3156.148	Ir I	4	-	-	3153.4	Rn	-	[5]	Pe	3150.693	Ru	60	60	-
3156.071	U	6	15	-	3153.372	Cb	1	30 h	-	3150.655	Cu	8	-	-
3155.963	Mo	-	5	-	3153.367	Fe	15	15	-	3150.607	Ir I	20	1	-
3155.953	Fe II	-	2	-	3153.345	Ce	3 h	-	-	3150.573	Ce	2	-	-
3155.860	U	8	8	-	3153.34	Kr	-	[2 wh]	Me	3150.568	V	5	2	-
3155.833	Th	12	10	-	3153.307	Dy	9	3	-	3150.55	Er	12	1	-
3155.794	Fe	5	1	-	3153.206	Fe I	100	80	-	3150.533	U	5	2	-
3155.793	Ce II	20	-	-	3153.19	Yb	2	5	-	3150.520	Re I	4	-	-
3155.79	Yb	2	2	-	3153.14	Pd II	-	2 h	-	3150.461	Ce	5	-	-
3155.779	Mn	5	-	-	3153.120	U	12	15	-	3150.46	Eu	4 h	1 h	-
3155.775	Rh	150	2	-	3153.11	Ag	2	5 h	-	3150.457	Th	12	15	-
3155.771	In II	-	[200]	Ps	3153.098	Ta	8 W	1 h	-	3150.407	Cb	1	50	-
3155.763	Nd	4	-	-	3152.960	Hf	8	-	-	3150.357	U	6	3	-
3155.704	Ce	20	-	-	3152.955	W	10	8	-	3150.304	Fe	60	30	-
3155.671	Zr II	10	12	-	3152.819	Mo	6	80	-	3150.273	Rh I	8	-	-
3155.670	Ti II	25	125	-	3152.81	Te	-	[5]	Bl	3150.164	Ru	3	-	-
3155.659	Ba I	2	-	-	3152.782	Cb	2	30	-	3150.12	Dy	10	5	m
3155.644	Yt I	2 h	-	-	3152.745	W II	3	9	-	3150.109	Cr	6	50	-
3155.644	Mo	-	50	-	3152.707	Co I	100	-	-	3150.07	Tm	8	10	Me
3155.62	Tb	15	3	Ed	3152.673	Os	150	18	-	3150.050	Re	2	-	-
3155.597	Cb	-	15	-	3152.656	Yt I	7	3	-	3150.042	V	2 h	-	-
3155.59	Pd II	-	40	Ex	3152.615	Ir I	10	1 h	-	3149.995	Ir	2 h	-	-
3155.518	W	9	6	-	3152.603	Rh	80	3	-	3149.974	U	6	5	-
3155.502	Ta	10	-	-	3152.538	Ta	8	1 h	-	3149.960	Th	10	5	-
3155.409	U	6	4	-	3152.521	Sm	15	9	-	3149.937	Ce II	12	-	-
3155.408	V	5	100	-	3152.489	Ce	2	-	-	3149.92	Ho	-	4	Ex
3155.4	Li II	-	[2]	Wr	3152.473	W	10	15	-	3149.920	Cd II	5	3	-
3155.35	Rh	6	-	m	3152.470	U	6	6	-	3149.883	Eu	40 w	20 w	-
3155.343	Ba I	2	-	-	3152.45	Yb	-	2	-	3149.849	W II	10	15	-
3155.328	Os	20	5	-	3152.379	Dy	12	-	-	3149.848	Fe	1	1	-
3155.299	Fe	50	35	-	3152.377	Er	12	3	-	3149.822	Cr	6	40	-
3155.256	U	3	6	-	3152.341	Mo	-	4	-	3149.808	U	6	2	-
3155.246	Ta	-	18 h	-	3152.307	U	8	10	-	3149.807	Os	15	8	-
3155.191	Mo	3	-	-	3152.301	Ir	2	-	-	3149.776	Ta	2 w	1	-
3155.18	Yb	2	15	-	3152.30	Cs	-	[6]	Bs	3149.67	Si	-	-	Sy
3155.149	Cr	30	25	-	3152.29	A I	-	[3]	Ms	3149.646	U	6	3	-
3155.121	Fe	4	1	-	3152.251	Ti II	30	125	-	3149.562	Pr	15	1	-
3155.10	Tb	8	3	Ed	3152.250	Ce	8	-	-	3149.511	Nd	8	4	Kn
3155.095	W	10	20	-	3152.159	Cb	2	50	-	3149.508	Cu I	50	2	-
3155.024	Sm	2	1	-	3152.125	Ir	2	-	-	3149.504	Ca	1	3	-
3154.856	Ca	1	2	-	3152.095	Sm II	10	5	-	3149.46	I	-	[35]	Bl
3154.815	Cb	3 w	200 w	-	3152.070	Os	80	15	-	3149.426	Ce	25	-	-
3154.808	U	2	2	-	3152.026	Fe	2	1	-	3149.36	Ca	-	[10]	Bs
3154.794	Co I	100	4 h	-	3151.998	W	4	3	-	3149.313	Co I	60	-	-
3154.737	Ir I	20	2	-	3151.996	Ta	3 r	1	-	3149.296	Nd	8	6	-
3154.730	Th	15	15	-	3151.893	Dy	18	5	-	3149.267	Na II	12	[40]	Fr
3154.696	Ta	3	1	-	3151.88	Eu	6	5	Kn	3149.253	Ce	12	-	-

3149.2—3141.5A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3149.21	U	18 d	18 d	-	3146.544	Re	10	-	-	3144.35	Ho	8	6	-
3149.14	Tm	15	-	Me	3146.471	Fe I	5	2	-	3144.343	Cb	5 h	10	-
3149.077	Ce	2	-	-	3146.466	Pr	15	3	-	3144.338	Os	20	8	-
3149.061	Zr I	2	-	-	3146.410	Ce II	30	-	-	3144.337	Mo	6	1	-
3149.055	U	2	4	-	3146.37	Au II	3	8	Ex	3144.32	Er	10 s	2	-
3149.00	Yb	2	4	-	3146.351	W	6	-	-	3144.260	Ru	60	8	-
3148.99	Xe II	-	[4]	Hu	3146.325	Mn	4	-	-	3144.217	Eu	3	-	-
3148.98	Rb II	-	[20]	Ok	3146.285	Zr	3	-	-	3144.154	Ce	5	-	-
3148.915	Fe	2 h	2 h	-	3146.260	U	3	3	-	3144.125	U	1	3	-
3148.857	Mn	5	-	-	3146.260	Ti I	2 h	1	-	3144.097	Pt II	7	10 h	Sh
3148.85	Ho	4	6	Ex	3146.230	V	2	70	-	3143.9896	Fe	200	150	IMe
3148.832	Ce	4	-	-	3146.225	Ce	4	-	-	3143.939	Zr I	3	-	-
3148.820	Zr I	6	-	-	3146.165	Dy	20	5	-	3143.903	Mo	3	1	-
3148.817	Sm	2	-	-	3146.165	Ce	20	-	-	3143.831	Dy	20	5	-
3148.738	V	-	50	Me	3146.16	Tm	30	15	Me	3143.802	Ir	3	-	-
3148.713	Cb	2	2	-	3146.14	Yb	-	2	-	3143.756	Ti II	18	125	-
3148.71	Tb	30	15	Ed	3146.10	Ag II	-	[8]	Bx	3143.74	Ne II	-	[4]	Bn
3148.69	Se	-	[20]	Bl	3146.067	Ru I	30	20	-	3143.7	Li	-	3	An
3148.651	Ce	20	-	-	3146.055	U	2 h	2	-	3143.68	Cr	2	6	-
3148.603	Ne I	-	[75]	Ps	3146.041	Th	12	15	-	3143.655	Ru	20	80	-
3148.525	Nd	6	2	-	3146.016	Nd	6	-	-	3143.63	Er	15	1	-
3148.51	La I	6	-	Me	3145.971	V II	10	15	-	3143.62	Xe II	-	[5]	Hu
3148.485	Ru	30	-	-	3145.956	Os	60	10	-	3143.593	Ce	5	-	-
3148.463	Ce II	18	-	-	3145.905	Mo	5	1	-	3143.555	U	4	2	-
3148.445	Cr	30	15	-	3145.834	Sm	5	2	-	3143.507	Sm	4	2	-
3148.414	Fe	100	40	-	3145.766	Cr	-	25	-	3143.473	V	1	50	-
3148.414	Hf	20	1	-	3145.76	Ca	-	2	Ad	3143.350	Ti I	4 h	-	-
3148.320	U	2	2	-	3145.755	W	6 d	12	-	3143.310	Nd	5	4	-
3148.299	Mo	-	10	-	3145.751	Mo	-	12	-	3143.306	Sm	8	3	-
3148.213	U	6	2	-	3145.719	Ni I	200	3	-	3143.245	Fe	60	30	-
3148.21	Tb	15	8	Ed	3145.7	La II	2 h	2 h	Me	3143.239	Ru	5	4	-
3148.204	Re	3	-	-	3145.697	Na II	-	[15]	Fr	3143.23	Er	4	1	-
3148.179	Mn	150	40	-	3145.636	Th	8	1	-	3143.210	W	8	3	-
3148.040	Th	3	40 h	-	3145.62	Cr	20	1	-	3143.181	Dy	6	2	-
3148.040	Mo	3	-	-	3145.61	Rh	2	-	-	3143.170	U	4	3	-
3148.036	Ti II	25	150	-	3145.60	Pb I	-	10	Sx	3143.141	Gd	5	3	-
3148.035	Ta	50	7	-	3145.559	U	12	10	-	3143.054	Mo	1	25	-
3147.965	F II	-	[15]	Di	3145.54	Yb	2	2	-	3143.043	Os	30	10	-
3147.954	Mo	-	25	-	3145.540	W	7	5	-	3143.008	Ir	2	-	-
3147.86	Cl II	-	[20]	Ks	3145.521	Au II	3	8	-	3142.955	Ta	10	50	-
3147.837	Ce	15	-	-	3145.521	Gd	10	8	-	3142.890	Ce	2	-	-
3147.793	Fe	40	15	-	3145.519	Fe	2	2	-	3142.889	Gd	2	1	-
3147.765	U	2	1	-	3145.515	Ti I	2	-	-	3142.883	Fe	80	70	-
3147.739	Ir I	10	-	-	3145.402	Ti II	3	15	-	3142.839	Th	12	12	-
3147.701	Ne I	-	[25]	Ps	3145.400	Cb	10	100	-	3142.812	Ca	-	2	-
3147.627	Rh I	5	-	-	3145.357	U	6	5	-	3142.812	Pd I	300	100	-
3147.605	Fe	10	5	-	3145.342	V II	25	60	-	3142.79	Er	9	2	-
3147.58	Au I	10	-	-	3145.319	Hf II	50	20	-	3142.790	In II	-	[10]	Ps
3147.580	Sm	3	-	Kn	3145.286	Mo	6	3	-	3142.762	La II	150	50	-
3147.555	Ce	2	-	-	3145.283	Ce II	30	-	-	3142.75	K II	-	[5]	Bn
3147.54	S	-	[35]	Bl	3145.222	Dy	18	5	-	3142.750	Mo	20	-	-
3147.533	Dy	10	2	-	3145.22	Tb	8	15	Ed	3142.742	Cr	1	20	-
3147.468	Ir	3	-	-	3145.2	Cs	-	[4]	Bs	3142.714	In II	-	[25]	Ps
3147.451	Ru	6	80	-	3145.18	Te	-	[10]	Bl	3142.670	Mn	50	-	-
3147.425	Ti I	3	1	-	3145.121	Ni I	6	-	-	3142.616	Re	25 w	-	-
3147.42	Eu	18	5 h	Kn	3145.103	Cr II	10	35	-	3142.601	U	12	10	-
3147.374	Ta	70	50	-	3145.068	Ir	20	2	-	3142.60	A I	-	[3]	Ms
3147.351	Mo	20	10	-	3145.057	Fe	40	25	-	3142.547	Ce	12	-	-
3147.290	Fe	20	10	-	3145.052	Yb	3	15	-	3142.515	Ir I	2 h	-	-
3147.268	Ti I	10	2	-	3145.030	Pt II	1	5 h	Sh	3142.475	V	15	100 r	-
3147.256	V	5	1	-	3145.021	Co I	30	-	-	3142.453	Fe I	125	100	-
3147.227	Cr II	25	150	-	3145.02	Xe	-	[4]	Hu	3142.444	Nd	8	8	-
3147.208	Ru I	50	3	-	3145.006	Gd	50	30	-	3142.444	Cu I	60	15	-
3147.188	Sm II	7	5	-	3144.965	U	10	8	-	3142.312	Ce	25	-	-
3147.09	U	12	15	-	3144.89	Tm	25	60	Me	3142.303	Dy	10	3	-
3147.064	Co I	150 R	-	-	3144.839	Nd	20	4	-	3142.29	Th	-	10 h	-
3147.04	Tb	50	3	Ed	3144.817	Ce	8	-	-	3142.256	Cb	-	15	-
3147.01	Si	-	2 h	Sy	3144.806	Mo	3	-	-	3142.186	V	3	20	-
3146.926	Cb	2	10	-	3144.758	Fe II	-	50	-	3142.145	W	9	8	-
3146.90	Ba I	2	2	Sd	3144.730	Ti II	4	20	-	3141.96	Tm	8	10	Me
3146.882	Gd	5	5	-	3144.720	Ru	4	-	-	3141.953	U	8	6	-
3146.882	Dy	2	1 h	-	3144.697	V	1	60	Me	3141.887	Fe	2	2	-
3146.868	Cb	1	15	-	3144.613	Mo	3	45	-	3141.849	Th	12	10	-
3146.821	Cu I	100	20	-	3144.6	Br I	8 wh	-	To	3141.82	Cr	4	2	-
3146.812	V	2	50	-	3144.596	Ce II	25	-	-	3141.818	Mn	3	-	-
3146.806	In II	-	[50]	Ps	3144.564	Nd	15	4	-	3141.810	Ir	2 h	-	-
3146.78	Cd II	-	[10]	Vs	3144.504	Er	10	2	-	3141.809	Sn	20	30	-
3146.780	Ce	5	-	-	3144.50	W II	-	15	-	3141.80	Er	5	2 d	-
3146.772	Ta	5	2	-	3144.495	Fe I	150	100	-	3141.73	Yb	2	10	-
3146.75	U	6	6	-	3144.48	Hg I	10	-	Cn	3141.730	Mo	-	25	-
3146.748	Fe II	-	4	Do	3144.46	Tb	8	3	Ed	3141.670	Ti I	15	7	-
3146.715	Eu	5	2	-	3144.409	Cr	50	12	-	3141.658	Pt	150	5 h	-
3146.683	Mo	25	5 h	-	3144.38	P	-	[30]	Gu	3141.62	Te	-	[5]	Bl
3146.67	Tb	8	-	Ed	3144.380	Ce	6	-	-	3141.6	Cd	-	[12]	Es
3146.601	In II	-	[25]	Ps	3144.37	Yt II	2 h	7	Me	3141.538	U	5	15	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3141.537	Ti I	30	12	-	-	3139.16	Cl	-	-	[15]	Bl	3136.55	A	-	-	[5]	Rt
3141.485	V	5	100	-	-	3139.069	V I	5	-	-	-	3136.514	V	20	200	-	-
3141.476	Nd	10	-	-	-	3139.02	A	-	-	[25]	Rt	3136.499	Fe	60	40	-	-
3141.46	Cs	-	-	[4]	Bs	3138.885	Ti I	5	-	-	-	3136.480	Ir	-	-	[5]	Ke
3141.424	W	9	-	-	-	3138.882	W	5	5	-	-	3136.476	Ir	3	-	-	Ab
3141.415	Mo	-	30	-	-	3138.760	Ru	10	-	-	-	3136.465	Mo	1	40	-	-
3141.384	Re I	30	-	-	-	3138.715	Mo	1	30	-	-	3136.412	Mo	-	40	-	-
3141.380	Ta	1 h	50 l	-	-	3138.678	Zr II	10	12	-	-	3136.36	Eu	3	-	-	-
3141.35	Ne II	-	-	-	Bn	3138.642	In II	-	-	[50]	Ps	3136.342	Ru	12	-	-	-
3141.212	Pr	10	2	-	-	3138.632	Ti I	2	2	-	-	3136.300	Ir I	2	-	-	-
3141.177	W	6	5	-	-	3138.63	Yb	-	4	-	Me	3136.297	Sm	15	7	-	-
3141.164	Ca I	3	-	-	Cw	3138.63	Tb	15	3	-	Ed	3136.292	Ta	5	-	-	-
3141.13	Dy	50	20	-	-	3138.605	Sm	2	2	-	-	3136.243	Ce	8	-	-	-
3141.13	Se II	-	-	[100]	Bl	3138.60	Ag	-	3 h	-	-	3136.218	Th	10	3	-	-
3141.12	Er	20	3	-	-	3138.56	In II	-	-	[50]	Ps	3136.15	Te	-	-	[5]	Bl
3141.08	Sb II	-	-	[15]	Lg	3138.532	V I	5	-	-	-	3136.100	Ir I	2 h	-	-	-
3141.05	V	-	5	-	-	3138.518	Fe	10	5	-	-	3136.070	W	9	7	-	-
3140.973	Ru I	60	-	-	-	3138.513	U	10	5	-	-	3136.066	U	5	3	-	-
3140.938	Os	50	12	-	-	3138.49	Er	9	1	-	-	3136.028	Ti I	8	-	-	-
3140.934	Yb	8	30	-	-	3138.485	Ta	15	1 h	-	-	3136.003	Ca I	15	3	-	Cw
3140.84	Cl	-	-	[4]	Bl	3138.40	O II	-	-	[35]	Mh	3135.924	Ru	12	-	-	-
3140.783	Ca I	15	3	-	-	3138.355	Mo	5	-	-	-	3135.916	Cb	2	10	-	-
3140.763	Hf II	25	25	-	-	3138.32	Pd	-	2 h	-	-	3135.894	Mo	5	4	-	-
3140.750	W	10 s	9	-	-	3138.299	Ta	2 h	1	-	-	3135.893	Ta	35	100	-	-
3140.740	Ir	2	-	-	-	3138.296	Ce II	20	-	-	-	3135.875	Al II	-	-	[10]	Sy
3140.734	Fe	2	2	-	-	3138.24	Kr	-	-	[2]	Me	3135.87	Cr	8	-	-	Ex
3140.731	Sc	2	-	-	-	3138.240	U	6	4	-	-	3135.861	Fe I	7	4	-	-
3140.721	Co I	20	3	-	-	3138.219	Mn	3	-	-	-	3135.833	Ce	4	-	-	-
3140.692	Pr	10	2	-	-	3138.203	Cr	15	6	-	-	3135.808	U	8	4	-	-
3140.676	Ce	12 h	-	-	-	3138.06	V	-	70	-	-	3135.802	Ru	10	80	-	-
3140.648	Mo	3	1	-	-	3137.912	W	9	3	-	-	3135.78	Pd II	-	-	5 h	Sh
3140.645	Dy	40	20	-	-	3137.852	Na II	-	-	[15]	Fr	3135.76	Hg	10	-	-	Cn
3140.62	Tb	8	3	-	Ed	3137.85	Er	10	2	-	-	3135.718	Ba I	2	3	-	-
3140.499	Cb	3	10	-	-	3137.850	Mo	3	1	-	-	3135.68	Dy	5	-	-	-
3140.484	Ru	50	-	-	-	3137.83	Pb I	-	100	-	Kl	3135.680	Fe	3	2	-	-
3140.44	Kr II	-	-	[3 whl]	Me	3137.809	Ce	4	-	-	-	3135.64	B II	-	3	-	Sy
3140.432	Ce	2	-	-	-	3137.80	Ba I	2	-	-	Sd	3135.61	Er	5	1	-	-
3140.412	Ir I	50 r	1	-	-	3137.785	Fe	2	1	-	-	3135.602	Mo	4	3	-	-
3140.408	W	9	8 s	-	-	3137.751	Co I	60	2	-	-	3135.590	Fe	3	2	-	-
3140.391	Fe	100	80	-	-	3137.73	Ba I	2	2	-	-	3135.569	Ce	15	-	-	-
3140.382	Sm	8	3	-	-	3137.721	Ir	8	3	-	-	3135.483	Na II	12	-	[40]	Fr
3140.37	Eu	2 h	1 h	-	-	3137.707	Rh I	100	-	-	-	3135.47	Rh I	5	-	-	-
3140.346	Ce	60	12	-	-	3137.693	U	5	4	-	-	3135.453	Fe	10	3	-	-
3140.314	Cu I	50	12	-	-	3137.66	A II	-	-	[5]	Rt	3135.404	Cb	2	10	-	-
3140.312	Cu I	50	12	-	-	3137.631	W	7	8 d	-	-	3135.37	Dy	100	50	-	-
3140.304	U	6	4	-	-	3137.601	Ce	25	-	-	-	3135.364	Fe II	1	100	-	-
3140.271	Th	8	1	-	-	3137.56	I II	-	-	[2]	Mu	3135.351	Pr	10	2	-	-
3140.21	Cr	-	6	-	-	3137.519	Os	25	10	-	-	3135.35	Tb	15	8	-	Ed
3140.084	Ru	8	-	-	-	3137.512	Hf	30	10	-	-	3135.341	Cr	1	25	-	-
3140.05	Tb	15	3	-	Ed	3137.454	Co I	50	-	-	Dn	3135.227	Ir	2 h	-	-	-
3139.990	V I	6	-	-	-	3137.442	Ta	3	50	-	-	3135.193	V I	8	-	-	-
3139.973	Sm	10	5	-	-	3137.406	Ce	2	-	-	-	3135.179	Ce	15	-	-	-
3139.948	Re	15	-	-	-	3137.4	Rn	-	-	[2]	Wo	3135.168	Yt II	10	18	-	-
3139.943	Co I	150 r	10	-	-	3137.352	Ti I	3	-	-	-	3135.10	Kr II	-	-	[8]	Me
3139.913	U	2	-	-	-	3137.327	Co I	150 r	-	-	-	3135.069	Ti I	2	-	-	-
3139.908	Fe	70	40	-	-	3137.323	Rh I	15	-	-	-	3135.068	Re I	15	-	-	-
3139.871	Mo	6	1	-	-	3137.275	Ir	2 h	-	-	-	3135.039	Gd	5	2	-	-
3139.87	Ti I	2	-	-	-	3137.253	Nd	10	4	-	-	3135.023	Ag	-	8 h	-	-
3139.86	Kr II	-	-	[4]	Me	3137.22	Tb	8	3	-	Ed	3135.0	Mg	4	2 h	-	Ed
3139.822	Th	10	5	-	-	3137.174	Th	10	5	-	-	3134.931	V	30	150 r	-	-
3139.801	Zr I	5	-	-	-	3137.116	Cr	-	4	-	-	3134.92	Cr	10	-	-	Ex
3139.797	Re	25 w	-	-	-	3137.053	Pr	10	2	-	-	3134.90	Rb	-	-	[10]	Ok
3139.780	I	-	-	[18]	Ke	3136.999	Co I	10	-	-	-	3134.897	Nd	40	30	-	-
3139.75	O II	-	-	[10 I]	Mh	3136.970	Cb	8	3	-	-	3134.802	Ru I	10	100	-	-
3139.745	V	15	150	-	-	3136.958	Mn	10	10	-	-	3134.8	Cs	-	-	[4]	Bs
3139.729	Sc II	6	12	-	-	3136.958	Zr I	8	1 h	-	-	3134.79	O II	-	-	[100 I]	Mh
3139.658	Fe I	15	8	-	-	3136.94	Eu	3 w	-	-	-	3134.718	Hf II	80	125	-	-
3139.653	Hf II	25	20	-	-	3136.909	Ru	6	-	-	-	3134.70	Eu	3 W	1	-	-
3139.64	Tb	30	15	-	Ed	3136.903	Ce	5	-	-	-	3134.695	U	5	2	-	-
3139.588	Ir I	5	-	-	-	3136.896	Ir	3	-	-	-	3134.654	Ti I	2	-	-	-
3139.58	Kr II	-	-	[20]	Me	3136.893	Fe	2	2	-	-	3134.604	Ce	4	-	-	-
3139.560	U	25	25	-	-	3136.893	U	6	8	-	-	3134.56	Ca	1	2	-	-
3139.503	Dy	4	1	-	-	3136.85	B II	3	3 h	-	Sy	3134.427	Th	10	12	-	-
3139.5	Mg	3	2	-	Ed	3136.830	Th	5	-	-	-	3134.42	Se II	-	-	[70]	Bl
3139.386	Pt I	300	80	-	-	3136.789	Pr	10	2	-	-	3134.405	Fe	3 h	1 h	-	-
3139.360	Sm II	6	2	-	-	3136.76	Yb	2	15	-	-	3134.40	Ho	6	4 h	-	Ex
3139.330	Eu	6	5	-	-	3136.749	Mo	1	5	-	-	3134.338	Cb	2	15	-	-
3139.307	Th	10	15	-	-	3136.726	Co I	60	-	-	-	3134.32	O II	-	-	[10 I]	Fl
3139.3	air	-	6	-	m	3136.722	Ce	25	-	-	-	3134.307	Cr	3	50	-	-
3139.272	Ru	20	-	-	-	3136.70	Th	5	5	-	-	3134.26	Tb	8	8	-	Ed
3139.241	Ce	4	-	-	-	3136.692	Dy	5	-	-	-	3134.186	Sm	6	1	-	-
3139.198	U	6	3	-	-	3136.680	Cr II	20	50	-	-	3134.111	Fe I	200	125	-	S
3139.182	Ce	4	-	-	-	3136.679	Nd	6	-	-	Kn	3134.108	Ni I	1000 R	150	-	-
3139.169	Ir	3	-	-	-	3136.67	Pd	-	2 h	-	Bx	3134.018	Re I	30	-	-	-
3139.166	Fe	2	2	-	-	3136.555	Ru	60	6	-	-	3133.920	U	6	5	-	-

3133.8—3125.8 Å.

Wave-length	Element	Intensities	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensities	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensities	Arc	Spk., [Dis.]	R
3133.89	Tm	200	200	Me		3131.216	Ta	5 h	25 h	—		3128.975	W	2	12	—	
3133.889	W	10	10	—		3131.211	Cr	20	6	—		3128.961	Ca	2	—	—	
3133.859	Gd	25	25	—		3131.195	Mo	—	5	—		3128.952	Re I	100 W	—	—	
3133.716	W	6	2 h	—		3131.115	Os	125	30	—		3128.899	Cb	2 h	5 h	—	
3133.697	Ru	12	—	—		3131.110	Zr I	7	—	—		3128.896	Fe	10	5	—	
3133.619	Th	10	10	—		3131.072	Be II	200	150	—		3128.83	Tb	3	3	Ed	
3133.603	Nd	15	10	—		3131.07	Er	3	—	—		3128.789	Yt II	10	40	—	
3133.553	Ta	15	3	—		3131.070	Th	12	10	—		3128.788	Zr II	2	—	—	
3133.533	Ce	2	—	—		3130.99	Ho	6	6	Ex		3128.786	U	8	6	—	
3133.50	Hf II	15	5	Me		3130.919	Ce	5	—	—		3128.755	Hf	20	1	—	
3133.475	Zr II	6	12	—		3130.872	Ce	30	2	—		3128.74	Te	—	[15]	Bl	
3133.424	U	8	6	—		3130.814	Gd	3	1	—		3128.701	Cu I	70	15	—	
3133.407	Ce	5	—	—		3130.80	A I	—	[20]	Ms		3128.699	Cr II	30	150	—	
3133.40	I II	—	[15 d]	Mu		3130.800	Ti II	25	100	—		3128.686	U	3	70	—	
3133.342	Ca	—	2	—		3130.790	Rh I	60	2	—		3128.640	Ti I, II	12	70 wh	—	
3133.328	Zr II	50	200 r	—		3130.786	Cb	100	100	—		3128.569	Gd	2	2	—	
3133.327	Ce	20	—	—		3130.74	Eu	100 W	100	—		3128.51	Mo	1 d	20 d	—	
3133.321	Ir I	40	2 h	—		3130.732	U	10	6	—		3128.439	Os	20	5	—	
3133.24	Eu	10	—	—		3130.71	S	—	[15]	Bl		3128.431	Ru	12	—	—	
3133.231	Zr I	5	—	—		3130.7	Cs	—	[4]	Bs		3128.409	Dy	40	10	—	
3133.226	Fe	5	4	—		3130.578	Ir	3	—	—		3128.390	Ir I	20	1	—	
3133.167	Cd I	200	300	Ime		3130.578	Ta	100 W	35	—		3128.368	Cb	2	10	—	
3133.15	Tb	8	—	—		3130.570	Ba I	2	3	—		3128.323	Mn	2 h	—	—	
3133.135	Ti I	4	—	—		3130.567	Fe II	4	4	—		3128.286	Sc II	3	10	—	
3133.10	Hf II	5	3	Me		3130.565	Cr	1	12	—		3128.285	Fe	5	4	—	
3133.096	Sc II	2	10	—		3130.564	U	—	15	—		3128.284	V	2	60	Me	
3133.092	Gd	3	1	—		3130.516	Ce	5	—	—		3128.074	U	6	10	—	
3133.086	Ir I	20	1	—		3130.48	Si	—	5	Sy		3128.002	Ce	10	—	—	
3133.083	Cb	3	4	—		3130.456	W	10	8	—		3127.913	Ru	10	100	—	
3133.053	Fe II	—	35	—		3130.416	Be II	200	200	—		3127.883	Ti I, II	7	35 wh	—	
3132.98	Dy	6	2	m		3130.40	Xe II	—	[2 wh]	Hu		3127.86	Yb	1	4	—	
3132.93	In	—	3	Sq		3130.38	P II	—	[30]	Gu		3127.808	Mo	—	30	—	
3132.878	Ru	60	5	—		3130.38	Ho	—	4 h	Ex		3127.765	Ta	18 w	100	—	
3132.87	A I	—	[3]	Ms		3130.376	Ti I	2	1	—		3127.750	Ce	15	—	—	
3132.858	Ce	3	—	—		3130.373	U	3 h	—	—		3127.73	W	—	10	—	
3132.84	Kr	—	[4 wh]	Me		3130.334	Ce	30	1	—		3127.72	Sm	2 d	1 h	—	
3132.820	Cr	20	2	—		3130.29	Ta	15 l	1	—		3127.693	Ir	3	—	—	
3132.792	Mn	8	—	—		3130.285	Ir	4	—	—		3127.689	Sc	3	1 h	—	
3132.775	Er	15	5	—		3130.278	Fe	5	4	—		3127.687	Fe	3	2	—	
3132.775	Ag	1 h	2 h	—		3130.267	V II	50	200 r	—		3127.684	Ti I	2 h	2	—	
3132.764	Cb	1	15	—		3130.25	La II	3	4	Me		3127.530	Ce II	40	—	—	
3132.707	Ti I	2	—	—		3130.235	Sm	5	—	—		3127.526	Cb	10 w	50	Me	
3132.680	Fe	5	3	—		3130.197	Ce	15	—	—		3127.37	I	—	[5]	Bl	
3132.643	Ta	250 w	25	—		3130.175	Ti I	2	—	—		3127.339	W	10	1 s	—	
3132.640	Ce	15	—	—		3130.159	Dy	4	2 h	—		3127.32	Er	10	1	Ex	
3132.60	Yb	15	6	—		3130.155	W	5	4	—		3127.249	Co I	100	—	—	
3132.594	Mo	1000 R	300 R	—		3130.12	Se	—	[8]	Bl		3127.234	Ti I	3	—	—	
3132.594	V	80 r	20	—		3130.063	Zr I	3	—	—		3127.182	Ce	5	—	—	
3132.590	Ce	25	—	—		3130.060	Mo	—	20	—		3127.175	Nd	4	2 h	—	
3132.58	Se	—	[20]	Bl		3130.009	Ag	25 h	15 h	—		3127.160	Sm	2	2 h	—	
3132.58	Te	—	[10]	Bl		3130.002	Os	30	8	—		3127.15	Th	10	10	—	
3132.514	Fe	70	40	—		3129.965	Gd	2	1	—		3127.14	Yb	—	—	—	
3132.513	Pd II	—	15 h	—		3129.950	Sm	5	—	Kn		3127.100	Ce	20	—	—	
3132.51	Er	12	3	—		3129.946	Ta	50	8	—		3127.022	Mo	1 d	2	—	
3132.285	Mn	15	—	—		3129.933	Yt II	8	50	—		3126.99	As II	—	15	Ro	
3132.22	Ne II	—	[4]	Bn		3129.911	Th	10	8	—		3126.925	Pt	1	8	Sh	
3132.216	Co I	40	—	—		3129.837	Ru I	60	4	—		3126.802	Dy	3	1	—	
3132.177	U	2	1	—		3129.761	Zr II	10	10	—		3126.777	Mo	—	20	—	
3132.16	Eu	15 w	—	—		3129.728	U	8	15	—		3126.758	Fe	6	3	—	
3132.14	La II	2	3 h	Me		3129.644	Cb	1	5	—		3126.725	Co I	70	—	—	
3132.137	Cb	1	2	—		3129.63	Pb I	—	3	Sx		3126.625	U	2	2	—	
3132.122	Dy	5	2	—		3129.624	Ti I	2	—	—		3126.608	Ru	12	50	—	
3132.066	Zr I	10	2	—		3129.604	Ru	50	1	—		3126.488	Co I	20	—	—	
3132.058	Cr II	25	125	—		3129.584	Hf	15	—	—		3126.48	Ba	—	2	Py	
3132.043	Ce	15	—	—		3129.549	Ta	50	7	—		3126.42	W	2	12	—	
3132.03	Er	6	2	—		3129.482	Co I	40	2	—		3126.291	Hf II	18	5	—	
3132.025	Re I	2	—	—		3129.41	O II	—	[25 l]	Mh		3126.215	V II	60	100 R	—	
3132.011	Cb	1	5	—		3129.368	Na II	35	[60]	Fr		3126.190	Ne I	—	[150]	Ps	
3131.987	U	8	6	—		3129.331	Ca	—	2	—		3126.18	Er	4	—	—	
3131.833	Hg I	200	100	—		3129.330	Fe I	100	60	—		3126.18	Dy	15	1 h	—	
3131.830	Co I	8	—	—		3129.316	Ce	12	—	—		3126.176	Yt II	6	6	—	
3131.814	Hf	40	10	—		3129.314	Ni I	125	—	—		3126.174	U	12	20	—	
3131.75	Sn II	—	10	Sd		3129.24	Dy	3	—	m		3126.173	Fe	150	70	—	
3131.75	Eu	20 W	5	Kn		3129.236	Ir	2 h	1 h	—		3126.108	Cu I	80	20	—	
3131.718	Fe II	—	35	—		3129.229	Os	60	15	—		3126.06	Yb	1	25 h	Me	
3131.679	Ce	4	—	—		3129.206	Cd	—	10	—		3126.026	Mo	—	10	—	
3131.618	U	1	2	—		3129.204	Pr	12	2	—		3126.02	Kr	—	[6 h]	Me	
3131.546	Hg I	400	300	—		3129.176	Zr II	10	10	—		3126.01	Tm	25	—	Me	
3131.534	U	4	2	—		3129.14	Yb	—	2	—		3125.997	Sm	5	—	—	
3131.505	Ce	2 d	—	—		3129.128	Ta	15 w	5 h	—		3125.963	Ru I	70	12	—	
3131.481	Os	20	10	—		3129.105	Fe	15	8	—		3125.96	Cl II	—	[5]	Ks	
3131.455	Fe	2 h	—	—		3129.1	Cs	—	[4]	Bs		3125.92	I	—	[10]	Bl	
3131.35	Tb	8	3	Ed		3129.075	Ti I	15	—	—		3125.918	Zr II	8	5	—	
3131.325	U	8	6	—		3129.041	Ce	4	—	—		3125.91	Te	—	[10]	Bl	
3131.26	Tm	400	500	Me		3128.997	Co I	25	—	Dn		3125.892	Cb	1	15	Me	

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3125.762	Ce II	20	-	-	-	3123.168	Re	25	-	-	-	3120.866	U	8	8	-	-
3125.72	La II	-	3	-	Me	3123.13	Sn	-	2 wh	-	-	3120.758	Ir I	50	2	-	-
3125.71	Th	8	3	-	-	3123.087	Er	12	1	-	-	3120.741	Zr I	10	2	-	-
3125.663	Hg I	200	150	-	-	3123.074	Ti I	35	15	-	-	3120.734	V	12	80	-	-
3125.656	Ti I	5	-	-	-	3123.069	Nd	8	6	-	-	3120.729	W	9	8	-	-
3125.654	Fe I	400	300	I	-	3123.05	Tb	15	3	Ed	-	3120.655	U	6	5	-	-
3125.65	Er	10	2	-	-	3123.032	Sm	2	1	-	-	3120.650	Oa	20	5	-	-
3125.6	Pb II	-	[50]	-	Ea	3123.004	Pr	10	2	-	-	3120.64	Cr	10	-	-	-
3125.553	Ti I	2	-	-	-	3122.962	Th	20	20	-	-	3120.6	Ti	-	3	Cx	-
3125.518	Re I	30	-	-	-	3122.954	Sc II	2	8	-	-	3120.543	Ru	10	-	-	-
3125.470	Cr	8	4	-	-	3122.946	Dy	3	1 h	-	-	3120.473	Ce	2	-	-	-
3125.463	Th	10	10	-	-	3122.895	V	12	300 r	-	-	3120.436	U	4	2	-	-
3125.44	Cl II	-	[6]	-	Ks	3122.854	Ce	3	-	-	-	3120.435	Cu I	25	3	-	-
3125.44	Yb	1	2	-	-	3122.83	Tb	8	3	Ed	-	3120.434	Fe	100	80	-	-
3125.358	W	10	9	-	-	3122.781	Au I	500 h	5	-	-	3120.4	Rn	-	[20]	-	Pe
3125.358	Ce	2	-	-	-	3122.758	Mo	5	1	-	-	3120.371	Cr II	40	150	-	-
3125.3	Cs	-	[4]	-	Bs	3122.65	Er	12	8	-	-	3120.36	Te	-	[10]	-	Bl
3125.284	V II	80	200 R	-	-	3122.646	Cb	8	3	-	-	3120.336	Mn	50	-	-	-
3125.268	Fe	5	2	-	-	3122.64	Ho	-	4	Ex	-	3120.231	Fe	5	2	-	-
3125.254	Ir	2 h	-	-	-	3122.62	O II	-	[20]	Fl	-	3120.212	Ti I	5	-	-	-
3125.193	Zr II	3	2	-	-	3122.620	Ce	10	-	-	-	3120.186	Gd	2	1	-	-
3125.17	Er	15	2	-	-	3122.611	U	5	4	-	-	3120.185	W	10	9	-	-
3125.16	Th	10	8	-	-	3122.596	Cr II	10	80	-	-	3120.184	Dy	25	10	-	-
3125.105	Eu	5	1 h	-	-	3122.55	Sn	-	2	-	-	3120.06	A I	-	[3]	-	Ma
3125.002	V	4	50	Me	-	3122.547	Hf	8	1	-	-	3120.022	Fe II	-	2	-	-
3124.978	Cr II	20	125	-	-	3122.547	Fe	4	4	-	-	3119.99	Ti I	2	-	-	-
3124.969	Ta	50	20	-	-	3122.542	Sc II	2 h	-	-	-	3119.980	Hf	25	1	-	-
3124.939	Os	150 h	10 wh	-	-	3122.54	Tm	10	-	Me	-	3119.946	Gd	15	10	-	-
3124.935	Sc	2	1 h	-	-	3122.50	Au II	-	2	-	-	3119.895	Oa	30	15	-	-
3124.927	Sm	9	3	-	-	3122.49	Eu	5 d	-	-	-	3119.879	U	5	2	-	-
3124.927	Ir	4	-	-	-	3122.432	Cu	7	1	-	-	3119.82	Cl II	-	[12]	-	Ks
3124.90	Tm	15	30	Me	-	3122.384	Ir I	25	1	-	-	3119.807	Mo	3	1	-	-
3124.900	U	12	10	-	-	3122.356	Sm	4	1	-	-	3119.802	Pt	6	3	-	-
3124.889	Fe	15	7	-	-	3122.301	Fe	70	20	-	-	3119.800	Ti II	4	150	-	-
3124.87	Eu	6 w	5	-	-	3122.213	Ce	2	-	-	-	3119.766	W	10	9	-	-
3124.859	Ce	3	-	-	-	3122.18	As II	-	10	Ro	-	3119.755	Nd	4	2	-	-
3124.817	Ge I	200	80	-	-	3122.065	Ti II	2	50	-	-	3119.725	Ti I	20	15	-	-
3124.734	W	8	3	-	-	3122.03	Rb	-	[2]	Ok	-	3119.706	Cr	30	6	-	-
3124.607	Ru	50	2	-	-	3122.03	Dy	5	5 h	m	-	3119.675	Sc I	3	2 h	-	-
3124.567	Nd	12	10	-	-	3122.004	Ru	6	-	-	-	3119.674	Ir	5	1	-	-
3124.54	Tb	8	8	Ed	-	3121.999	Mo	5	150	-	-	3119.671	Ca	-	8	-	-
3124.504	W	6	5	-	-	3121.99	Si	-	3	Sy	-	3119.67	Au	5	-	-	-
3124.426	U	10	6	-	-	3121.965	Zr I	2	-	-	-	3119.667	Fe	1	1	-	-
3124.414	Na II	2	[15]	-	Fr	3121.960	Cb	2	3	-	-	3119.62	Tb	15	8	Ed	-
3124.402	Rh I	5	-	-	-	3121.94	Tb	15	8	Ed	-	3119.60	As I	100	50	Me	-
3124.4	Cd	-	[10]	-	Es	3121.89	Er	12	1	-	-	3119.594	Ta	18	5	-	-
3124.388	Th	12	15	-	-	3121.87	Xe II	-	[150]	-	Hu	3119.577	Ce	12	-	-	-
3124.366	Ru I	30	2	-	-	3121.828	U	6	2	-	-	3119.494	Fe	100	80	-	-
3124.30	P II	-	[15]	-	Gu	3121.8	Cd	-	[10]	Es	-	3119.491	Ru	4	-	-	-
3124.264	Gd	4	-	-	-	3121.796	Cr	-	8	-	-	3119.484	Th	15	15	-	-
3124.21	Eu	2 h	1 h	-	-	3121.78	Eu	2 h	1 h	-	-	3119.351	Ce	2	-	-	-
3124.19	F II	-	[3 h]	-	Di	3121.778	Ir I	35	1	-	-	3119.348	U	10	10	-	-
3124.167	Ru I	60	8	-	-	3121.773	Fe	7	5	-	-	3119.324	V	-	3	-	-
3124.131	U	5	2	-	-	3121.770	Cd	-	2	-	-	3119.246	Cr	4	-	-	-
3124.101	Ce	20	-	-	-	3121.755	Rh I	150	-	-	-	3119.242	U	8	8	-	-
3124.09	Fe I	1	-	-	-	3121.749	V I	12	-	-	-	3119.203	Re	5	-	-	-
3124.081	Ir I	4	-	-	-	3121.741	Re	5	-	-	-	3119.05	Er	8	2	-	-
3124.074	Nd	4	2 d	-	-	3121.740	U	4	2	-	-	3119.049	U	6	6	-	-
3124.02	O II	-	[5]	-	Fl	3121.7	air	-	5	-	-	3119.028	Pr	15	2	-	-
3124.02	Tb	15	3	Ed	-	3121.64	Cr	10	-	-	-	3119.018	Gd	2	1	-	-
3124.02	Xe II	-	[8 h]	-	Hu	3121.62	Cl II	-	[10]	-	Ks	3119.00	Rb	-	[20]	-	Ok
3124.004	Os	15	8 h	-	-	3121.599	Ti II	4	20	-	-	3118.920	Pb	5 h	-	-	-
3124.002	Gd	10	8	-	-	3121.571	Pr	50	4	-	-	3118.915	Cd	3	2	-	-
3123.957	Eu	20	-	-	-	3121.57	I	-	[5]	-	Bl	3118.859	Sm	2	-	-	-
3123.956	Sc	2	5	-	-	3121.566	Co I	60 r	3	-	-	3118.839	Ce	2	-	-	-
3123.953	Hf	8	-	-	-	3121.55	In	-	3	Sq	-	3118.836	Ir	2	2	-	-
3123.951	Fe	5	5	-	-	3121.502	Ta	2 h	1	-	-	3118.833	Er	12	3	-	-
3123.949	Ce	15	-	-	-	3121.479	Ce	3	-	-	-	3118.824	Ti II	2	15	-	-
3123.921	Ir	2	-	-	-	3121.43	Tb	8	3	Ed	-	3118.812	Mo	-	10	-	-
3123.769	Ti I	15	3	-	-	3121.415	Co I	150 r	6	-	-	3118.786	W	8	7	-	-
3123.72	Cl II	-	[15]	-	Ks	3121.4	Ti	-	3	Cx	-	3118.738	U	2	2	-	-
3123.717	U	4	2	-	-	3121.370	Re I	100	-	-	-	3118.685	Ru	50	3	-	-
3123.70	Tb	8	3	Ed	-	3121.330	U	6	4	-	-	3118.652	Cr II	35	200	-	-
3123.697	Rh I	150	2	-	-	3121.281	Ce	2	-	-	-	3118.603	Gd	2	1	-	-
3123.671	U	6	8	-	-	3121.228	Mo	-	5 h	-	-	3118.51	Ho	8	10	Ex	-
3123.566	Ce	12	-	-	-	3121.20	Cr	-	6	-	-	3118.440	Er	6	-	-	-
3123.548	Fe	3	1	-	-	3121.18	Br	-	[3]	-	Bl	3118.43	Lu	40	5	Me	-
3123.51	Yb	1	2	-	-	3121.157	W	9	6	-	-	3118.383	V II	70	200 R	-	-
3123.365	Mo	5	25	-	-	3121.145	V II	60	200 r	-	-	3118.355	Cu I	5	1 h	-	-
3123.349	Ce	8	-	-	-	3121.092	U	6	5	-	-	3118.354	W	10	7	-	-
3123.346	Fe	10	4	-	-	3121.085	Ce	2	-	-	-	3118.35	Cs	-	[4]	-	Bs
3123.30	Tm	10	20	Me	-	3121.037	Cr	-	5	-	-	3118.328	Os	150	20	-	-
3123.30	Sr	2	2	Sd	-	3121.02	Ba I	2	-	-	Sd	3118.246	Co I	60	2	-	-
3123.217	Ir I	2	-	-	-	3120.920	Ta	18	5	-	-	3118.193	Re	200	-	-	-
3123.179	U	2	1	-	-	3120.874	Fe	80	50	-	-	3118.19	Pb	-	2	-	-

3118.1—3110.8 Å.

Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R
3118.130	Ti I	10	1	-	3115.91	Dy	3	-	-	3112.986	Ag	5	-	-
3118.128	Mn	4 h	-	-	3115.859	Ta	50	18 w	-	3112.982	U	5	5	-
3118.122	Os	80	15	-	3115.795	U	6	4	-	3112.98	Yb	-	2	-
3118.071	Ru I	50	50	-	3115.74	Eu	6	-	Kn	3112.98	Cr	12	-	-
3118.02	Ne II	-	[12]	Bn	3115.74	Th	10	10	-	3112.973	Ce	8	-	-
3118.012	Pt II	1	15 h	Sh	3115.727	Zr II	2	2	-	3112.964	Cd II	-	2	-
3117.99	Te	-	[25]	Bl	3115.674	Ag	-	3 h	-	3112.96	I	-	[18]	Bl
3117.98	U	6 d	8 d	-	3115.658	Fe	3	1	-	3112.925	V I	12	-	-
3117.96	Rh	4	10	-	3115.647	Ce	2 h	-	-	3112.920	Ta	1	50 l	-
3117.94	Ba I	2	-	Sd	3115.645	Cr	-	40	-	3112.879	Dy	3	-	-
3117.899	Sm	5	3	-	3115.572	U	2	-	-	3112.83	Rb I	15	-	Bv
3117.899	Ti I	4	-	-	3115.542	Sm	2	-	-	3112.755	Ce	6	-	-
3117.898	Dy	2	1 h	-	3115.537	Cb	1	5	-	3112.74	Xe II	-	[12]	Hu
3117.891	Os	30	10	-	3115.534	Er	15	1	-	3112.677	Ru	50	3	-
3117.890	Sc I	2	-	-	3115.465	Mn	50	25	-	3112.63	La II	3	10 hl	Me
3117.888	Fe	3	3	-	3115.452	Ru	3	-	-	3112.50	B	-	5	Sy
3117.88	Ag	2	3 h	-	3115.423	Bi	-	500	Om	3112.482	Ti I	10	2	-
3117.856	Ir	5	-	-	3115.359	Fe	-	1	-	3112.375	Cb	1 h	4 h	-
3117.85	A	-	[3]	Ms	3115.333	Yb	2	20	-	3112.356	Ir I	3	-	-
3117.804	Yb	7	30	-	3115.274	Cr II	-	30	-	3112.35	Th	-	20 h	-
3117.773	Ce	3	-	-	3115.172	Nd	4	2	-	3112.304	Ru	30	-	-
3117.762	Fe	2	2	-	3115.15	Cb	-	8 h	-	3112.249	U	10	6	-
3117.760	Ir	5	-	-	3115.116	Ce	4	-	-	3112.206	Cd	3	2	-
3117.725	Sm	8	3	-	3115.09	Er	12	1	-	3112.202	Ce	15	-	-
3117.7	Pb II	-	[100]	Ea	3115.088	Ti II	1	12	-	3112.182	Hf	3	-	-
3117.669	Ti II	15	200	-	3115.042	Sm II	6	4	-	3112.18	Cs	-	[4]	Bs
3117.653	Ca	10	2	-	3115.002	U	10	8	-	3112.178	Ir	3	-	-
3117.640	Fe	20	10	-	3114.909	Rh I	100	2	-	3112.124	V	20	1	-
3117.636	Th	12	12	-	3114.88	Rb	-	[20]	Ok	3112.124	Mo	40	10	-
3117.629	Eu	2 h	-	-	3114.877	Mo	3	25	-	3112.087	Th	10	4	-
3117.580	W	10	12	-	3114.86	Cr	15	-	-	3112.087	Ir	4	2	-
3117.545	Mo	5	20	-	3114.860	Nd	4	-	-	3112.081	Fe	30	20	-
3117.523	Ir	6	-	-	3114.814	Os	50	12	-	3112.050	Ti II	7	70	-
3117.510	Dy	6	2	-	3114.778	Sm	6	1	-	3112.032	Yt II	12	10	-
3117.471	Ce	2	-	-	3114.778	Sc	2	2 h	-	3112.03	Er	20	6	-
3117.455	Ti I	8	-	-	3114.775	Fe	4	2	-	3112.00	Te	-	[15]	Bl
3117.441	Ta	70	10	-	3114.682	Fe II	-	10	-	3111.959	W	6	9	-
3117.385	W	6	5	-	3114.631	Re	3	-	-	3111.941	Cr II	-	40	-
3117.332	Ir	2	2	-	3114.623	Sm	2	1	-	3111.912	Ru I	50	5	-
3117.279	U	6	4	-	3114.6	Rn	-	[50]	Pe	3111.831	Th	20 d	8 d	-
3117.26	Tb	8	3	Ed	3114.594	U	12	4	-	3111.826	Ce	4 w	-	-
3117.258	Cr	1	30	-	3114.583	W	6	3	-	3111.821	Fe	10	6	-
3117.191	Sc	2 h	-	-	3114.549	Ir I	25	10	-	3111.810	Yt I	10	-	-
3117.191	Fe	2	2	-	3114.45	Cr	10	-	-	3111.8	Rn	-	[2]	Wo
3117.186	Sm	4	1	-	3114.43	Yt II	7	3 h	-	3111.684	Fe	8	3	-
3117.185	Ir	3	-	-	3114.293	Fe II	-	80	-	3111.67	Bi II	-	[25]	MI
3117.006	Ce	4	-	-	3114.283	Yt	10	-	-	3111.640	Mo	-	25	-
3116.982	Fe	2	-	-	3114.137	Pr	3 r	-	-	3111.621	U	15	15	-
3116.950	Hf II	20	20	-	3114.124	Ni I	300	50	-	3111.612	Cb	-	4 h	-
3116.947	Er	20	2	-	3114.121	Mn	3	-	-	3111.569	Re I	25	-	-
3116.869	Dy	4	2	-	3114.092	Ti I	15	2 h	-	3111.548	Dy	4	-	-
3116.869	W	9	3	-	3114.08	Cr	2 wh	-	-	3111.52	Pd II	-	3 h	-
3116.839	Ru	30	-	-	3114.068	Th	10	5	-	3111.462	U	3	-	-
3116.781	V	-	25	-	3114.047	Ir I	25	15	-	3111.45	Kr	-	[2 h]	Me
3116.78	Xe	-	[2]	Hu	3114.040	Pd I	400 w	500 w	-	3111.450	Cb	4	5	-
3116.744	Cr	-	35	-	3114.039	Pt	3	-	-	3111.432	Eu	200	-	-
3116.714	Ni I	2	-	-	3113.92	Kr II	-	[2]	Me	3111.43	Rb	-	[30]	Ok
3116.70	Yb	2	-	-	3113.903	Ta	50	35 w	-	3111.41	Bi II	-	[15]	MI
3116.68	Zr	-	4 h	Ks	3113.885	Zr	-	2 h	-	3111.38	Pb	-	2	Sx
3116.658	Ru	30	-	-	3113.788	Ir I	2	-	-	3111.34	Cr	6	-	-
3116.633	Fe I	150	-	S	3113.693	Ce	2	-	-	3111.339	Co I	20	3	-
3116.63	As II	-	150	Ro	3113.637	U	8	12	-	3111.337	Pr	15	2	-
3116.63	A	-	[3]	Ms	3113.62	Tb	15	8	Ed	3111.283	Ti I	15	8	-
3116.63	Se	-	[20]	Bl	3113.592	Fe	25	10	-	3111.234	Ce	10	-	-
3116.60	I	-	[7]	Ke	3113.567	V	7	100	-	3111.224	Mo	1	15	-
3116.590	Fe II	-	150	Do	3113.536	Er	12	3	-	3111.20	Bi II	-	[10]	MI
3116.57	Cb	1	4 w	-	3113.506	Zr I	3	-	-	3111.165	Ce	20	-	-
3116.49	Yb	1	3	-	3113.482	Cu I	12	2	-	3111.160	Zr II	2	1	-
3116.476	Th	10	10	-	3113.48	Ho	-	4 h	Ex	3111.123	W	9	15	-
3116.475	Os	50	15	-	3113.480	Mo	2	6	-	3111.09	Os	100	20	-
3116.428	U	6	4	-	3113.479	Co I	100	4	-	3111.02	Bi II	-	[7]	MI
3116.365	Cb	8	3	-	3113.407	Sm	5	-	-	3111.00	Cr	8	-	-
3116.348	Cu I	50	12	-	3113.397	Ru I	50	-	-	3110.998	Ce	2	-	-
3116.3	Rn	-	[5]	Pe	3113.370	Sc	3	1	-	3110.965	Be I	15	-	-
3116.30	Te	-	[5]	Bl	3113.367	Fe	2	2	-	3110.88	Bi II	-	[5]	MI
3116.288	Th	5 d	10	-	3113.355	Ir	6	-	-	3110.878	Zr II	10	8	-
3116.250	Fe I	5	4	-	3113.31	Tm	10	20	Me	3110.874	Hf II	30	40	-
3116.24	Hg II	-	[100]	Ps	3113.228	Nd	4	1	-	3110.87	Er	12	-	-
3116.214	W	7	3	-	3113.214	Re	10	-	-	3110.862	Re I	100	-	-
3116.141	Nd	10	4	-	3113.179	Gd	3	3	-	3110.860	Cr	15	8	-
3116.092	Mo	1	60	-	3113.175	Cb	1	5	-	3110.844	Mo	-	30	-
3116.06	Yb	1	3	-	3113.131	Ir I	2 h	-	-	3110.842	Be I	20	-	-
3116.055	V	-	10 h	Me	3113.130	Mn	15	-	-	3110.841	Fe	20	10	-
3115.979	Ce	5	-	-	3113.104	Dy	5	2 h	-	3110.832	U	6	8	-
3115.929	U	8	15	-	3113.02	Eu	10 W	5	-	3110.825	Co I	60	2	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk.,	[Dis.] R			Arc	Spk.,	[Dis.] R			Arc	Spk.,	[Dis.] R
3110.815	Ta	—	70 w	—	3108.364	Gd	3	3	—	3106.018	Fe	4	4	—
3110.800	Cb	1 h	5	—	3108.33	Ho	6	4	Ex	3105.992	Os	150	20	—
3110.784	U	3	1	—	3108.327	Ir	2	—	—	3105.972	V	—	5 h	Me
3110.757	Dy	10	5 h	—	3108.298	Th	15	20	—	3105.95	Te	—	[5]	Bl
3110.71	Fe	2	—	—	3108.29	Rh	3	—	—	3105.946	Ir I	4	—	—
3110.706	V II	70	300 R	—	3108.203	Eu	10	1 h	—	3105.924	Co I	30	—	—
3110.677	Mn	35	35	—	3108.176	Ba	10	6	—	3105.878	W	10 l	7	—
3110.673	Ti	10	100	—	3108.100	U	3	2	—	3105.864	Ce	2	—	—
3110.66	A I	—	[3]	Ms	3108.022	W	12	10	—	3105.750	Th	15	20	—
3110.644	Mo	3	—	—	3108.008	Nd	6	2	—	3105.7	Rn	—	[60]	Wo
3110.620	Ti II	8	18	—	3107.978	Fe	20	10	—	3105.671	Ir	2	—	—
3110.618	Os	30	10	—	3107.976	Os	25	8	—	3105.668	Hf	10	—	—
3110.580	Pr	10	1	—	3107.935	U	4	5	—	3105.667	Sc I	2	—	—
3110.549	Ru I	60	6	—	3107.897	Yb	10	60	—	3105.666	Fe	4	2	—
3110.525	U	3	8	—	3107.871	Re	2	—	—	3105.646	U	5	4	—
3110.281	Fe	40	30	—	3107.864	Os	30	8	—	3105.56	Cr	10	—	—
3110.278	Ce	30	1	—	3107.841	Hf II	1	2	—	3105.548	Fe II	1	30	Do
3110.24	Eu	20	—	—	3107.821	Ir	2 h	—	—	3105.501	Ce	3	—	—
3110.238	Sc I	3	5	—	3107.82	Xe	—	[15 whl]	Hu	3105.50	Se II	—	[20]	Bl
3110.227	Ir	4	1	—	3107.81	Cd	—	2	—	3105.477	Th	10	4	—
3110.226	U	3	3	—	3107.799	Ta	3 r	1 h	—	3105.469	Ni I	200	35	—
3110.193	Sm	15	4	—	3107.774	Mn	12	—	—	3105.419	Nd	8	2	—
3110.188	Fe	6	6	—	3107.758	Yb	2	20	—	3105.412	U	3	4	—
3110.103	Ta	3	1	—	3107.73	Ti II	—	2	Sx	3105.411	Ru I	50	1	—
3110.095	Ti II	3	35	—	3107.715	Ru I	60	5	—	3105.400	Pr	20	1	—
3110.038	U	6	3	—	3107.714	Ni I	25	—	—	3105.283	Ru	50	40	—
3110.022	Th	15	15	—	3107.636	Ce	2	—	—	3105.266	Ce	15	—	—
3110.021	Co I	60	2	—	3107.579	Ru	10	50	—	3105.220	Ti I	2 h	—	—
3109.965	Sm	1	10 h	—	3107.572	Cr	2	125	—	3105.168	Fe II	—	60	—
3109.93	Ho	6	2 h	Ex	3107.566	Ir	4	—	—	3105.160	Ta	2 h	—	—
3109.84	Hg	—	[18]	Ps	3107.549	Mo	—	25	—	3105.148	Ce	4	—	—
3109.79	Cr	2	—	—	3107.546	U	6	6	—	3105.099	U	8	8	—
3109.78	Yb	1	2	—	3107.542	Co I	15	3	—	3105.084	Ti II	12	100	—
3109.768	Dy	40	20	—	3107.538	Ce	2	1	—	3105.053	Th	10	10	—
3109.759	Re I	20	—	—	3107.529	Sc II	8	12	—	3105.001	Dy	20	5	—
3109.757	Pr	10	2	—	3107.524	Sm	4	2	—	3105.00	K II	—	[30]	Bn
3109.75	A	—	[3]	Rt	3107.468	Ce	25	—	—	3104.995	Rh I	4	—	—
3109.736	Cb	2	2	—	3107.468	Ti I	5 h	2	—	3104.98	Os	200 d	15 d	—
3109.679	Os	20	20	—	3107.388	Ca	5	2	Cw	3104.98	Lu	—	25 hl	Me
3109.626	U	6	3	—	3107.387	Sc II	4	1	—	3104.928	Ce	4 w	—	—
3109.624	Ba I	2	—	—	3107.378	Os	40	10	—	3104.913	V	7	25	—
3109.620	Fe	2	1	—	3107.348	U	10	6	—	3104.9	Rn	—	[10]	Pe
3109.581	Ti	10	1	—	3107.327	Fe	2	1	—	3104.805	Mg II	15	—	Fl
3109.51	Ca I	4	—	Sd	3107.24	Cr	8 h	—	—	3104.78	Yt II	2	7	—
3109.510	Co I	60	1 h	—	3107.234	W	12	10	—	3104.713	Mg II	15	—	Fl
3109.436	La I	25	2	—	3107.211	Ta	20	3	—	3104.70	Cr	10	18	—
3109.403	Ru	20	—	—	3107.144	V	10	—	—	3104.651	Re I	30	—	—
3109.383	Ce	15	—	—	3107.10	Te	—	[15]	Bl	3104.621	Ru	5	—	—
3109.381	Os	125	20	—	3107.044	Co I	70	3	—	3104.593	Ti II	3	15	—
3109.372	V	1	70	—	3107.029	Th	15	15	—	3104.593	Ce	3	—	—
3109.357	Ir I	8	8	—	3107.02	Mg	—	5	Ed	3104.59	Cd	—	4	—
3109.341	Sc	3	4	—	3106.984	Cb	2	10	—	3104.589	La II	200	50	—
3109.337	Fe	3	3	—	3106.93	Dy	6	—	—	3104.47	Cl	—	[8]	Bl
3109.336	Cr	30	12	—	3106.927	Ca	1	2	—	3104.464	Ru	30	—	—
3109.3	Cs	—	[4]	Bs	3106.859	Mo	1	5	—	3104.426	W	5	2	—
3109.211	U	6	2	—	3106.840	Ru I	50	3	—	3104.425	Ta	15 h	1 h	—
3109.156	Pd II	5	30 h	—	3106.829	V	—	5	Me	3104.41	Te	—	[10]	Bl
3109.15	Tb	8	3	Ed	3106.806	Ti I	12	2	—	3104.40	Xe II	—	[40 h]	Hu
3109.117	Hf II	50	100	—	3106.797	U	1	2	—	3104.396	Na II	2	[20]	Fr
3109.070	Fe	2	2	—	3106.787	Er	15	2	—	3104.381	Mo	15	—	—
3108.981	Os	125	15	—	3106.744	Mn	5	—	—	3104.38	A II	—	[10]	Rt
3108.964	Ce	10	—	—	3106.71	Cd	2	4	—	3104.372	U	6	4	—
3108.954	Fe	2	2	—	3106.7	Rn	—	[30]	Pe	3104.260	Cb	1	5	—
3108.927	Ti II	2	15	—	3106.691	Th	12	10	—	3104.169	Ir I	2	—	—
3108.924	Ce	8	—	—	3106.67	Au	5	5	—	3104.168	Fe	2	2	—
3108.875	Yt I	5	—	—	3106.63	I	—	[5]	Bl	3104.167	Ta	2 h	—	—
3108.811	Re I	125	—	—	3106.576	Zr II	10	15	—	3104.162	U	20	20	—
3108.781	W II	3	12	—	3106.559	Fe II	1	30	Do	3104.121	Dy	5	—	—
3108.770	Mn	5	—	—	3106.546	Sc	4	1	—	3104.067	Mo	2	3	—
3108.701	V	3	50	—	3106.520	Sm II	15	5	—	3104.012	Ce	10 h	—	—
3108.690	U	8	4	—	3106.520	Cb	2	5	Me	3103.994	V I	15	—	—
3108.649	Cr	—	35	—	3106.50	Rb	—	[2]	Ok	3103.983	Co I	60 r	—	—
3108.635	Mn	8	—	—	3106.460	Mo	2	—	—	3103.94	Au II	—	8	—
3108.63	Ho	—	4	Ex	3106.341	Mo	10	25 d	—	3103.916	Mo	3	—	—
3108.605	Cu I	20	5	—	3106.34	Cl	—	[4]	Bl	3103.849	Fe	2	2	—
3108.58	Ca I	30	3	Sd	3106.234	Ti II	25	150	—	3103.839	Dy	30	10	—
3108.552	Ce	2	—	—	3106.173	Nd	6	4	—	3103.804	Ti II	20	200	—
3108.54	Se II	—	[15]	Bl	3106.172	Eu	20	1	—	3103.80	Si	—	2	Sy
3108.511	Sc II	4	5 hl	—	3106.167	U	8	6	—	3103.771	U	8	6	—
3108.462	La II	10	8	—	3106.16	F II	—	[10]	Di	3103.767	Fe	2	2	—
3108.452	Cu	15	1 h	—	3106.14	Si	—	2	Sy	3103.754	Ir I	10	1	—
3108.426	Ru I	30	—	—	3106.11	V I	8	—	—	3103.742	Co I	80	2	—
3108.41	Tb	8	3	Ed	3106.023	Hf	12	1	—	3103.736	I	—	[3]	Ke
3108.374	Zr I	5	—	—	3106.022	Sc	2 h	1 h	—	3103.69	Hf	10	—	Me
3108.367	U	5	5	—	3106.021	Ir	4	—	—	3103.672	Yt	3	—	—

3103.5—3096.1 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3103.516	W II	2	15	-	3101.11	Mo	1	15	-	3098.588	Fe	5	5	-
3103.474	Cr	-	50	-	3101.033	Ta	-	100 W	-	3098.55	Rb II	-	[5]	Ok
3103.415	Os	20	8	-	3101.005	In II	-	[10]	Pa	3098.503	Pr	20	3	-
3103.413	Ru	3	50	-	3101.004	Fe	8	8	-	3098.476	Nd	8	2	-
3103.377	Ce	15 h	2	-	3101.003	Re	2 h	-	-	3098.470	Cb	1	5	-
3103.269	Ce	3	-	-	3100.97	Cb	2	1	-	3098.465	Mo	20	25	-
3103.256	Re	3	-	-	3100.961	Pt I	15	4	-	3098.448	W	8	4	-
3103.251	Ta	70	15	-	3100.939	Th	12	12	-	3098.436	Ir	2	-	-
3103.246	Dy	30	1	-	3100.935	V	20	100	-	3098.331	Th	8	1	-
3103.239	Yt II	8	7	-	3100.934	In II	-	[10]	Ps	3098.310	W II	2	10	-
3103.133	U	2	1	-	3100.875	Mo	40	2	-	3098.25	Cl	-	[3]	An
3103.073	Mn	2	-	-	3100.867	In II	-	[18]	Pa	3098.196	Co I	100 r	5	-
3103.008	Ce	2	-	-	3100.839	Fe	3	3	-	3098.192	Fe I	70	60	-
3102.975	Ti II	2	2	-	3100.839	Ru I	70	50	-	3098.191	Sm	-	4 h	-
3102.97	Tb	30	15	Ed	3100.810	Cb	1	5	-	3098.17	Eu	25 d	5	-
3102.899	U	6	3	-	3100.771	U	6	2	-	3098.160	Cr	-	30	-
3102.88	Tm	20	15	Me	3100.74	W II	2	20	-	3098.148	Ce	5	-	-
3102.874	Pb I	-	10	-	3100.698	In II	-	[18]	Ps	3098.050	Dy	4	-	-
3102.872	Fe	30	20	-	3100.666	Fe I	100	100	-	3098.011	U	10	10	-
3102.73	Xe	-	[2]	Hu	3100.666	Re I	100	-	-	3098.01	Tm	5	20	Me
3102.72	I II	-	[2]	Mu	3100.666	Ti I	30	15	-	3098.005	Sm	1	2	-
3102.716	Os	20	8	-	3100.659	In II	-	[10]	Pa	3097.985	Ag	5	-	-
3102.686	Er	15	2	-	3100.571	In II	-	[5]	Pa	3097.96	Th	1	50 h	-
3102.68	Ho	-	4	Ex	3100.51	Tb	15	8	Ed	3097.879	Ru	6	15	-
3102.666	Th	15	12	-	3100.508	Gd	100	80	-	3097.815	Ir I	12	10	-
3102.66	Ag	3	-	-	3100.507	Mo	2	6	-	3097.815	Fe	20 h	10 h	-
3102.638	Fe	6	5	-	3100.446	Ir I	18	3	-	3097.81	I	-	[5]	Bl
3102.63	A	-	[3]	Rt	3100.304	Fe I	100	100	-	3097.78	Pr	15	2	-
3102.613	U	6	5	-	3100.302	Mn	60	60	-	3097.689	Mo	10	30	-
3102.563	Ce	15 h	-	-	3100.286	Ir I	30	2	-	3097.626	Ti II	1	5	-
3102.557	Gd	25	25	-	3100.25	Cb	-	20	Me	3097.605	Ru	2	18	-
3102.527	Rh I	10	-	-	3100.22	Ca I	2	-	Cw	3097.506	Fe	1 h	1 h	-
3102.517	Ti I	5	-	-	3100.19	Rn	-	[50]	Rc	3097.456	Eu	200 w	5	-
3102.431	Ce	10	-	-	3100.168	Cb	1	5	-	3097.385	Mo	10	-	-
3102.407	Co I	60	4	-	3100.09	A I	-	[5]	Ms	3097.38	Ca	-	[10]	Bs
3102.396	Ru	20	-	-	3100.038	Pt I	2	25	-	3097.349	Ir	2 h	-	-
3102.39	U	12 d	10 d	-	3100.00	I II	-	[2]	Mu	3097.33	Te	-	[5 h]	Bl
3102.361	Fe	2	2	-	3099.971	Fe I	40	40	-	3097.270	Th	10	8	-
3102.359	Ca	2 h	4	-	3099.934	Cu I	60	10	-	3097.231	Ru	30	-	-
3102.358	Ce	12	-	-	3099.932	Mo	25	3	-	3097.201	Mo	20	-	-
3102.358	Hf	15	3 h	-	3099.897	Fe I	60	60	-	3097.2	Rn	-	[18]	Wo
3102.355	Ir	4	-	-	3099.866	In II	-	[40]	Ps	3097.186	Ti II	20	150	-
3102.299	Sm	8	4	-	3099.863	Th	10	6	-	3097.15	Ne II	-	[7]	Bl
3102.299	V II	70	300 R	-	3099.804	U	8	2	-	3097.122	Cb	3 w	100 w	-
3102.25	K I	20 R	-	Fl	3099.80	Ca	1	2 h	Ad	3097.118	Ni I	200	50	-
3102.23	Sn	-	[2]	Mc	3099.744	Th	10	6	-	3097.079	Ce II	18	-	-
3102.221	W	2	12	-	3099.739	In II	-	[18]	Ps	3097.063	Mn	75 w	40	-
3102.19	Dy	4	1 h	-	3099.73	Rb	-	[10]	Ok	3096.97	Tm	15	50	Me
3102.149	Sc I	3	4	-	3099.670	Co I	50	-	-	3096.941	Ir I	2 h	-	-
3102.147	Hf	6	1	-	3099.665	Zr I	2	-	-	3096.94	Pr	2	-	-
3102.144	Fe	2	2	-	3099.61	Tm	10	50	Me	3096.92	Si	-	4	Sy
3102.144	Ir	4	-	-	3099.58	V	2 h	-	-	3096.90	Xe II	-	[5]	Hu
3102.09	B II	-	5	Sy	3099.569	Mo	10	-	-	3096.899	Mg I	150	25	-
3102.07	Yb	1	8	-	3099.547	Eu	6 w	3 h	-	3096.898	Ca	1	2 h	-
3102.03	K I	50 R	-	Fl	3099.515	Nd	6	4	-	3096.883	Ce II	20	-	-
3101.99	La	-	4 h	Me	3099.426	Ce	5	1	-	3096.88	U	5 d	5 d	-
3101.930	Sm	10	8	-	3099.422	Sc	2 h	1 h	-	3096.877	Sm	10	4	-
3101.925	Gd	5	3	-	3099.417	Fe	2	2	-	3096.86	Tb	3	8	Ed
3101.917	Cb	2	10	-	3099.34	Ca I	10	2	Sd	3096.836	Fe	30	20	-
3101.915	Mo	5	-	-	3099.320	U	6	5	-	3096.829	Nd	2	2	-
3101.91	Dy	4	2	-	3099.283	Ru I	70	60	-	3096.823	Ir	5	-	-
3101.879	Ni I	400 R	150	-	3099.261	Os	40	8	-	3096.80	Sc	7 d	3	-
3101.865	U	6	4	-	3099.24	Mo	-	20	-	3096.758	Hf	25	1	-
3101.80	Ra I	-	[75]	Rs	3099.230	Zr II	9	5	-	3096.726	Ce	2	-	-
3101.791	Ce	20	-	-	3099.19	Er	18	6	-	3096.72	Cl II	-	[25]	Ks
3101.722	Ta	7	2	-	3099.186	Cb	3	15	-	3096.70	Cr	15	2	-
3101.703	Re	3	-	-	3099.162	Sm	6	-	-	3096.700	Co I	60	3	-
3101.699	U	8	8	-	3099.159	Mo	10	-	-	3096.668	Sm II	8	3	-
3101.691	Th	10	8	-	3099.142	Ce	4	-	-	3096.622	Yt I	3	-	-
3101.557	Mn	50	50	-	3099.123	Hf II	-	3	-	3096.608	U	2	5	-
3101.554	Ni I	1000 R	150	-	3099.122	Ag	10	8	-	3096.568	Ru	70	60	-
3101.528	Os	125	20	-	3099.115	Ni I	200	50	-	3096.54	Ag	1	3 h	-
3101.526	Ti I	8	12	-	3099.049	U	12 r	4	-	3096.531	Cr	35	-	-
3101.51	Xe II	-	[30 h]	Hu	3098.958	Ce	2	-	-	3096.52	Kr II	-	[20 hs]	Me
3101.45	Te	-	[5 h]	Bl	3098.928	Ir I	10 r	5	-	3096.501	Ce	25	-	-
3101.407	Ne	-	[7]	Ps	3098.903	Gd	5	2	-	3096.495	Cb	4	3	-
3101.397	Hf II	60	90	-	3098.836	Ru I	3	-	-	3096.434	Th	10	8	-
3101.392	Ce	10	-	-	3098.804	U	8	4	-	3096.424	Ti II	3	35	-
3101.357	Yb	2	12	-	3098.686	U	3	3	-	3096.411	Re I	20	-	-
3101.345	Mo	80	10	-	3098.651	Gd	15	8	-	3096.405	Co I	60	3	-
3101.27	Pr	40	2	-	3098.64	Tb	15	-	Ed	3096.402	Ce	5	-	-
3101.23	W II	-	5	-	3098.597	Sc	2 h	1	-	3096.340	Ir	2 h	-	-
3101.218	Mo	4	-	-	3098.593	Hf	10	-	-	3096.324	Ca	1	2	-
3101.186	Gd	3	2	-	3098.59	Tm	80	60	Me	3096.296	Fe II	2	30	Do
3101.167	Ir I	5	1	-	3098.590	Ir	5	-	-	3096.13	Cr	1	100	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3096.128	Ir	3	-	-	-	3093.740	Cd II	3	2	-	-	3091.248	Os	40	15	-	-
3096.116	Ta	1	2 h	-	-	3093.680	Mo	10	-	-	-	3091.200	Eu	10	-	-	-
3096.069	Sm	3	5 h	-	-	3093.652	Re I	60	-	-	-	3091.108	Ce	3	-	-	-
3096.044	Fe	3	1	-	-	3093.614	Ce	18	-	-	-	3091.097	Fe	2	1	-	-
3096.023	La I	15	2	-	-	3093.587	Os	125	15	-	-	3091.077	Mg I	80	10	-	-
3096.012	W	6	3	-	-	3093.58	Bi I	10 w	8	To	-	3090.98	Hg	-	[5]	Ps	-
3095.902	V I	15	-	-	-	3093.512	W	12	10	-	-	3090.897	Ru	30	1	-	-
3095.88	Er	25	8	-	-	3093.488	Cr	1	100	-	-	3090.880	Ce	20	-	-	-
3095.878	Yt II	10	8	-	-	3093.48	Rh I	2	3	-	-	3090.779	V I	8	-	-	-
3095.873	W	2	20	-	-	3093.460	Ca	2	3	-	-	3090.701	Ce	18	-	-	-
3095.859	Ce	5	-	-	-	3093.447	Ru	4	-	-	-	3090.65	S	-	[8]	Bi	-
3095.859	Cr	125	3	-	-	3093.44	Yb	-	2	-	-	3090.647	Mo	4	-	-	-
3095.823	Zr I	8	-	-	-	3093.41	A II	-	[50]	Rt	-	3090.60	Hg II	-	[200]	Ps	-
3095.81	Re I	30 w	-	-	-	3093.37	U	4 d	3 d	-	-	3090.585	W	9	8	-	-
3095.77	Cs	-	[6]	Bs	-	3093.357	Fe	70	40	-	-	3090.554	U	8	8	-	-
3095.762	Ce	8	-	-	-	3093.339	Ce II	12	-	-	-	3090.536	V	2 h	-	-	-
3095.75	Dy	15	1 h	-	-	3093.321	Zr I	3	-	-	-	3090.516	Ce	15	1	-	-
3095.748	U	10	10	-	-	3093.3	Au II	-	5	Ex	-	3090.492	Os	80	15	-	-
3095.718	Co I	60	2	-	-	3093.28	Si	-	6	Sy	-	3090.446	Sm	3	1	-	-
3095.716	Sm	3	2	-	-	3093.243	Ce	6	-	-	-	3090.437	Zr I	8	1 h	-	-
3095.701	Mo	25	-	-	-	3093.12	Tm	30	60	Me	-	3090.416	W	8	6 d	-	-
3095.581	Ce	20	-	-	-	3093.108	V II	100 R	400 R	Me	-	3090.39	Rh	4	-	-	-
3095.488	Cr	-	12	-	-	3093.108	Dy	15	5	-	-	3090.372	Ce	20	3	-	-
3095.472	Sm II	2	2 h	-	-	3093.055	Th	12	6	-	-	3090.372	Ir	2	-	-	-
3095.45	Cd	-	[10]	m	-	3093.012	U	20	20	-	-	3090.357	U	10	8	-	-
3095.40	Yb	3	-	-	-	3093.0	Rn	-	[18]	Pe	-	3090.296	Os	100	12	-	-
3095.393	Ta	70 w	18 w	-	-	3093.00	Cl	-	[4]	Bi	-	3090.254	Co I	80	1	-	-
3095.382	Cr	15	2	-	-	3092.994	Ta	18	1	-	-	3090.229	Ru	50	6	-	-
3095.364	Sc I	2	-	-	-	3092.991	Mg I	125	20	-	-	3090.209	Fe	30	15	-	-
3095.344	Ir	4	-	-	-	3092.92	Mo	-	10 d	-	-	3090.190	Dy	5	-	-	-
3095.278	Ca I	10	2	-	-	3092.915	Nd	8	6	-	-	3090.163	Ir I	10	1	-	-
3095.269	Fe	10	6	-	-	3092.91	Ne II	-	[4]	Bi	-	3090.137	Ti I	12	2	-	-
3095.262	Ce	3	1	-	-	3092.886	Cb	1 h	5	-	-	3090.102	Th	15	10	-	-
3095.231	U	10	10	-	-	3092.842	Al	50 R	18	-	-	3090.085	Os	100	15	-	-
3095.23	Yb	-	2	-	-	3092.818	Ce	4	1	-	-	3090.051	Ti II	-	100 wh	-	-
3095.14	Kr II	-	[30 hs]	Mo	-	3092.778	Fe	50	30	-	-	3089.957	Gd	8	8	-	-
3095.099	Ce II	15	-	-	-	3092.729	Na II	50	[200]	Fr	-	3089.937	Re	20	-	-	-
3095.071	Zr II	8	5	-	-	3092.724	Ce	4	-	-	-	3089.907	Ta	2	7 h	-	-
3095.061	Re	40	-	-	-	3092.720	V	100 r	50 r	-	-	3089.88	U	6 d	1 d	-	-
3095.041	U	12	12	-	-	3092.720	U	5	3	-	-	3089.856	Cd II	-	3	-	-
3094.98	A	-	[3]	Rt	-	3092.713	Al I	1000	1000	-	-	3089.801	Ru I	60	5	-	-
3094.927	Cr	-	15	-	-	3092.712	Yt	8	-	-	-	3089.787	Ce	4	-	-	-
3094.92	Yb	1	2	-	-	3092.70	Mo	20	2	-	-	3089.77	Er	5	1	-	-
3094.900	Fe I	30	15	-	-	3092.56	Yb	-	30	-	-	3089.741	Fe	2	2	-	-
3094.830	U	10	10	-	-	3092.519	Sc II	3	4	-	-	3089.73	Te	-	[25]	Bi	-
3094.82	Cs	-	[4]	Bs	-	3092.444	Ta	50	15	-	-	3089.706	Mo	40	5	-	-
3094.799	Zr I	5	-	-	-	3092.42	Sc	3	-	-	-	3089.677	Nd	10	-	Kn	-
3094.76	La	2	3	Me	-	3092.41	Xe II	-	[10]	Hu	-	3089.631	Th	10	10	-	-
3094.74	Th	10	6	-	-	3092.401	Ir	5	-	-	-	3089.628	V	-	10	-	-
3094.692	V I	40	-	-	-	3092.399	Fe	4	5	-	-	3089.62	Yb	1	2	-	-
3094.69	Sn II	-	[6]	Mc	-	3092.393	Cd II	10	15	-	-	3089.604	Dy	5	-	-	-
3094.664	Mo	150	25	-	-	3092.32	Te	-	[15]	Bi	-	3089.595	Co I	100 r	-	-	-
3094.629	Eu	3	1 h	-	-	3092.285	W	7	3	-	-	3089.584	Ce	3	-	-	-
3094.625	Sc	4	1	-	-	3092.245	Hf II	20	20	-	-	3089.58	Tb	30	15	Ed	-
3094.622	Fe	3	4	-	-	3092.240	Zr	3	-	-	-	3089.512	Fe	2	-	-	-
3094.617	Ir	3	-	-	-	3092.22	Cl II	-	[50]	Ks	-	3089.401	Ti II	12	100	-	-
3094.558	Ru	6	50	-	-	3092.197	Ce	3	-	-	-	3089.388	Fe II	-	10	-	-
3094.53	Xe II	-	[12 h]	Hu	-	3092.074	Mo	30	100	-	-	3089.345	Eu	20	-	-	-
3094.460	U	3	4	-	-	3092.064	Gd	3	2	-	-	3089.314	W	8	7	-	-
3094.393	Ru	50	3	-	-	3092.057	Ta	15	1	-	-	3089.184	W	8	8	-	-
3094.366	Ir I	5	-	-	-	3092.035	Ce	2	-	-	-	3089.145	Ru I	60	12	-	-
3094.359	Cb	2	-	-	-	3091.976	U	2	2	-	-	3089.130	V I	30	2	-	-
3094.328	Fe	2 h	2 h	-	-	3091.93	Er	5	-	-	-	3089.122	Mo	30	3	-	-
3094.199	V	20	125 r	-	-	3091.918	Ce	20	-	-	-	3089.10	Tb	3	3	Ed	-
3094.184	Eu	10 w	-	-	-	3091.873	Ru	50	5	-	-	3089.093	Pb I	-	30	-	-
3094.183	Cb II	100	1000	-	-	3091.840	Mo	10	-	-	-	3089.092	Yb	3	12	-	-
3094.08	Ne II	-	[12]	Bn	-	3091.79	Hf II	8	3 h	Me	-	3089.060	W	8	8	-	-
3094.074	Os	30	8	-	-	3091.706	Ce	5	1	-	-	3089.02	Lu	-	8 h	Me	-
3094.032	W	8	10	-	-	3091.699	Yt	6	3	-	-	3089.015	Ca	1	3	-	-
3094.009	Ir I	20	10	-	-	3091.66	Ti II	-	50	MI	-	3089.008	Zr II	2	-	-	-
3093.992	Cu I	150	50	-	-	3091.626	I	-	[25]	Ke	-	3088.987	U	20	15	-	-
3093.950	Ce	4 l	-	-	-	3091.61	Ti II	-	25	MI	-	3088.980	Sm II	5	2	-	-
3093.947	Cr	-	25	-	-	3091.6	Cs	-	[4]	Bs	-	3088.92	Xe	-	[2]	Hu	-
3093.901	Ru	30	100	-	-	3091.578	Fe I	300	200	S	-	3088.9	Ce	-	[4]	Bs	-
3093.883	Nd	6	-	-	-	3091.52	V I	8	1	Kn	-	3088.842	Th	10	6	-	-
3093.883	Fe	40	30	-	-	3091.461	U	5	4	-	-	3088.821	Sm	2 h	-	-	-
3093.879	Yb	3	15	-	-	3091.437	V I	10	-	-	-	3088.799	Fe	2 h	2 h	-	-
3093.869	Ta	50	15	-	-	3091.4	Rn	-	[10]	Pe	-	3088.767	Re	60	-	-	-
3093.868	U	3	4	-	-	3091.366	Hf	12	-	-	-	3088.76	Er	8	2	-	-
3093.82	Dy	10	1	-	-	3091.366	Ce	2	1	-	-	3088.680	Co I	10	-	-	-
3093.813	Ti I	5	-	-	-	3091.366	Ir	3	-	-	-	3088.6	bh B	100	-	L	-
3093.806	Fe I	50	40	-	-	3091.34	Pr	10	2	-	-	3088.53	La II	2	3 h	Me	-
3093.792	V I	30	-	-	-	3091.30	Au	5	-	-	-	3088.523	Al II	-	[10]	Sy	-
3093.77	Yt II	9 d	15 d	-	-	3091.294	Ce I, II	20	-	-	-	3088.508	U	8 r	1	-	-
3093.75	Er	6	1	-	-	3091.25	U	15 rd	12 rd	-	-	3088.473	Th	20	20	-	-

3088.4—3080.7 A.

Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R
3088.43	Tb	15	8	Ed	3086.229	Ca	2	4	-	3083.15	Fe	1	1	-
3088.42	Dy	2	-	-	3086.210	V	1	30	-	3083.148	Ru I	50	3	-
3088.361	U	2	1	-	3086.072	Cb	-	10	-	3083.067	Ce	5	-	-
3088.350	Fe	2	1	-	3086.067	Ru	60	6	-	3083.050	Th	12	6	-
3088.320	Rh I	3	-	-	3086.06	B	-	2	Sy	3083.027	Fe II	1	2	-
3088.318	Mo	20	-	-	3086.046	U	6	5	-	3083.022	U	5	4	-
3088.312	Ce	5	-	-	3085.82	Yb	1	4	-	3082.99	A II	-	[5]	Rt
3088.267	Cb	2	-	-	3085.790	Sm	2	-	-	3082.875	I	-	[25]	Ke
3088.266	Os	60	12	-	3085.758	Ce	8	-	-	3082.857	Cb	3	5	-
3088.24	A II	-	[10]	Rt	3085.74	Se	-	[8]	Bl	3082.844	Co I	35	-	-
3088.231	Ru	4	-	-	3085.68	Eu	4 w	-	-	3082.771	Re	2	-	-
3088.23	Ne II	-	[7]	Bn	3085.67	Rh	2 h	-	-	3082.703	Mn	12	12	-
3088.187	I	-	[35]	Ke	3085.615	Mo	125	25	-	3082.68	Cd I	30	-	Ps
3088.184	Sm	6	-	Kn	3085.577	Ce	2	-	-	3082.62	Xe II	-	[12]	Hu
3088.132	Cu I	30	7	-	3085.542	Re	2	-	-	3082.618	Co	150 R	50	-
3088.114	V I	30	-	-	3085.535	Ta	70	18	-	3082.615	Ti I	6	-	-
3088.075	Ru I	30	2 wh	-	3085.469	Ru	4	-	-	3082.587	U	6	4	-
3088.038	Ir I	50	2	-	3085.453	Ce	4	-	-	3082.57	Tm	10	-	Me
3088.031	Th	10	10	-	3085.415	Ce	4	-	-	3082.56	Sc II	2	2 h	-
3088.029	Cb	3	5	-	3085.40	Te	-	[5 h]	Bl	3082.523	V	3	30	-
3088.025	Ti II	70	500 R	-	3085.388	U	8	1	-	3082.515	Dy	15	5	-
3087.95	U	6 d	4 d	-	3085.352	Cr	-	15	-	3082.447	Ta	15 h	1 h	-
3087.922	Sm	4	2	-	3085.352	Re	2	-	-	3082.432	Re I	100 w	-	-
3087.884	Cr	-	40	-	3085.344	Zr I	2	-	-	3082.36	Tb	3	2	Ed
3087.880	U	6	6	-	3085.29	Hg I	2 h	-	Cn	3082.304	Ce	20	8	-
3087.859	Cb	2	10	-	3085.206	Cu	4	1 h	-	3082.3	Rn	-	[10]	Wo
3087.806	Co I	60	-	-	3085.202	Fe	3	3	-	3082.27	Rb I	10	-	Bv
3087.79	Er	9	1	-	3085.198	Ir	4	1	-	3082.261	Sm	1	2 h	-
3087.76	Ta	5 wh	70	-	3085.081	Gd	2	1	-	3082.220	Mo	4	40	-
3087.748	Os	50	10	-	3085.05	A	-	[5]	Rt	3082.176	Th	10	10	-
3087.680	U	8	6	-	3085.029	Pr	10	1	-	3082.167	Yt II	4	10 d	-
3087.642	W	6	2	-	3085.018	Ti I	2	1	-	3082.155	Al I	800	800	-
3087.621	Mo	30	200	-	3084.952	Ir	2 h	-	-	3082.111	V I	80 r	2 h	-
3087.540	Cr	10	2	-	3084.911	W	10	7	-	3082.08	Er	12	3	-
3087.526	Ta	35	5	-	3084.866	Cd	10	40 h	-	3082.052	Mn	50	-	-
3087.52	Te	-	[10]	Bl	3084.860	Pt	2	2	-	3082.031	Th	12	8	-
3087.52	Dy	2	1 h	-	3084.823	W	10	9	-	3082.020	U	8	8	-
3087.415	Rh I	20 s	-	-	3084.819	Ti I	10	2	-	3082.012	V I	15	2 h	-
3087.413	Th	8	1	-	3084.776	Re	3	-	-	3082.000	Gd	100	60	-
3087.399	Ce	8	1	-	3084.736	Ir	2 h	-	-	3081.984	Ce	5	-	-
3087.379	Sm	15	4	-	3084.723	Ce	4	-	-	3081.98	S	-	[15]	Bl
3087.348	Fe	2	2	-	3084.667	U	6	4	-	3081.950	Mo	25	10	-
3087.345	Sc	4	1	-	3084.596	Os	60	10	-	3081.864	W	10	7	-
3087.320	U	6	4	-	3084.56	Cr	10	1	-	3081.850	Ta	50	5	-
3087.172	Ce	10	-	-	3084.526	Ru	30	2	-	3081.84	Fe	2	2	-
3087.161	Re I	25	-	-	3084.525	Ta	3 h	-	-	3081.769	Cb	1	15	-
3087.12	Er	5	-	-	3084.475	Eu	2	-	-	3081.666	U	6	4	-
3087.112	U	6	3	-	3084.466	Ce	40 s	3	-	3081.664	I	-	[100]	Ke
3087.077	Ni II	-	150	-	3084.458	Sm II	3	1	-	3081.662	Th	10	5	-
3087.065	V I	25	2	-	3084.453	Cr	-	35	-	3081.656	Fe	2 h	2 h	-
3087.047	Na II	-	[5]	Fr	3084.4	Cs	-	[4]	Bs	3081.65	Mo	-	20	-
3087.039	Pb	-	20	-	3084.381	V I	40	1	-	3081.600	Yt II	-	2	-
3087.02	Tm	30	60	Me	3084.373	Cb	1	15	-	3081.58	Cd II	-	2	Vs
3087.011	Ce	2	-	-	3084.36	Ho	8	10	Ex	3081.575	Ti II	-	40 wh	-
3086.98	Yb	1	4	-	3084.36	Er	10	2	-	3081.550	Fe	2	2	-
3086.972	W	10	5	-	3084.35	Yb	-	4	-	3081.548	Sc I	1	2 h	-
3086.930	Ru	30	1	-	3084.286	Sm II	3	2	-	3081.547	Ca I	2	-	-
3086.91	Rb	-	[20]	Ok	3084.257	Ce	5	-	-	3081.47	Lu	80	8	Me
3086.879	Mo	5	-	-	3084.239	Mo	25	1	-	3081.46	O	-	[5 h]	Fl
3086.858	Yt II	12	50	-	3084.238	U	15	12	-	3081.42	La II	4	7	Me
3086.825	Ti I	3	-	-	3084.214	Re I	40	-	-	3081.388	U	2	1	-
3086.784	Ru I	8	-	-	3084.20	Se	-	[20]	Bl	3081.384	Ru	4	50	-
3086.78	Tb	15	8	Ed	3084.116	Pt	10	2	-	3081.38	Er	3	1	-
3086.777	Co I	200 R	-	-	3084.02	Er	15	4	-	3081.375	W	7	3	-
3086.77	Cr	8	1	-	3084.003	Gd	2	2	-	3081.330	Mn	75	25	-
3086.742	Sm	1	4	-	3083.985	Ir	5	-	Ab	3081.253	V	5	50	-
3086.73	U	5 d	3 d	-	3083.965	Rh I	150	2	-	3081.245	Ce	3	-	-
3086.69	Fe	2 h	2 h	-	3083.959	Ce	3	-	-	3081.225	Fe	2 h	2 h	-
3086.678	Ce	4	-	-	3083.91	Te	-	[5]	Bl	3081.21	W II	-	3	-
3086.560	Fe	2 h	2 h	-	3083.742	Fe I	500	500	S	3081.188	U	4	2	-
3086.54	Ho	8	6	Ex	3083.740	Ca	1	2	-	3081.155	Mo	25	-	-
3086.54	Pd II	-	2 h	-	3083.738	In II	-	[10]	Ps	3081.13	Tm	20	-	Me
3086.520	Ru	30	40	-	3083.670	Ce	20 s	5	-	3081.097	Cb	-	10	-
3086.503	V	2	40	-	3083.653	In II	-	[5]	Ps	3081.05	In	-	3	Cx
3086.465	U	3	1	-	3083.647	Hf	6	-	-	3081.004	V	2	30	-
3086.461	Zr II	2	1	-	3083.612	U	10	8	-	3080.985	Fe	4	4	-
3086.447	Sm	6	8	-	3083.601	Cr	-	35	-	3080.930	Nd	10	4	-
3086.44	Si	-	7	Sy	3083.539	V I	60	-	-	3080.927	Dy	10 s	5	-
3086.440	Ir I	35	2	-	3083.408	Ce	3	-	-	3080.923	Re	5 w	-	-
3086.396	Co I	80	2	-	3083.371	Cu II	2	2 h	-	3080.900	Ru I	50	6	-
3086.389	Ag	5	1 h	-	3083.347	Th	12	15 h	-	3080.874	Ca II	-	[6]	Ot
3086.37	Cl	-	[6]	Bl	3083.333	Cb	2	15 h	-	3080.845	Hf	25	5	-
3086.363	Mo	20	-	-	3083.283	Sc	3	8	-	3080.827	Cd I	150	100 l	1 Me
3086.274	Os	50	10	-	3083.224	Ir I	25	2 h	-	3080.826	Ca I	20	2	-
3086.272	Pd II	-	2 h	-	3083.214	V	2	50	-	3080.755	Ni I	200	60	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3080.754	Fe	2	2	-	3077.831	Cr I	25	125 r	-	3075.206	Ce	3	2	-
3080.741	U	12	12	-	3077.730	U	2	1	-	3075.20	Dy	3	4	-
3080.72	Cr	12	1	-	3077.720	Os	100	30	-	3075.166	Pd I	2	2 h	-
3080.709	Sm II	3	2	-	3077.718	V I	10	30	-	3075.14	P	-	[15 h]	Gu
3080.701	W	10	8 s	-	3077.7	Rn	-	[30]	Pe	3075.06	V	-	5 h	-
3080.657	Hf II	30	100	-	3077.661	Mo	20	125	-	3075.042	U	10	8	-
3080.636	Ce	18	2	-	3077.648	Ir I	8	1	-	3075.03	Re	5 h	-	m
3080.635	Mo	8	-	-	3077.648	I	-	[18]	Ke	3075.01	Sr II	1	3	Sd
3080.6	P II	-	[15 h]	Dj	3077.644	Ce	15	-	-	3075.00	K II	-	[10]	Br
3080.421	W	8	5	-	3077.643	Fe	60	25	-	3074.96	Os	125	20	-
3080.408	Mo	60	6	-	3077.60	Lu	100	200	Me	3074.929	Mo	20	-	-
3080.403	Fe II	-	2	-	3077.552	Ru	30	1	-	3074.827	V I	25	-	-
3080.350	Cb	8	100	-	3077.519	W	2	40 wh	-	3074.791	Hf	30	4	-
3080.333	V I	15	1 h	-	3077.443	Cb	1	10	-	3074.762	Ir I	12	-	-
3080.27	Pr	-	5 d	-	3077.437	Os	80	8	-	3074.71	Tb	3	3	Ed
3080.250	Na I	2	[15]	Fr	3077.353	Eu	30	20	-	3074.665	Al II	-	[50]	Sy
3080.221	Th	12	15	-	3077.334	Ce	15	-	-	3074.658	V	-	30	-
3080.20	Kr	-	[2 h]	Me	3077.331	U	4	1	-	3074.63	Mo	1	8	-
3080.193	Ru	30	-	-	3077.247	Cr	-	40	-	3074.62	Cd	1 h	3	-
3080.184	Ti I	2	8 wh	-	3077.245	Ta	150 w	50 w	-	3074.492	U	2	3	-
3080.146	V I	8	1 h	-	3077.2	Cd	-	[12]	Es	3074.438	Fe	40	25	-
3080.112	Fe	30	15	-	3077.168	Fe II	1	300	-	3074.374	Mo	60	15	-
3080.11	Lu	15	2	Me	3077.14	Yt II	7	2	Me	3074.372	U	4	4	-
3080.11	Tb	3	3	Ed	3077.093	Gd	5	3 h	-	3074.334	Na II	8	[60]	Fr
3080.099	Nd	4	2	-	3077.063	Ru	30	40	-	3074.324	Ce	12	-	-
3079.993	Ir	2 h	-	-	3077.056	Os	100	12	-	3074.30	Ho	-	4	Ex
3079.985	Fe	30	20	-	3077.034	Sc	2 h	-	-	3074.27	Cb	1	5	-
3079.97	Pd	-	2 h	Bx	3077.01	Pd II	-	2 h	Bx	3074.164	Ce	6	-	-
3079.958	Ce	10	2	-	3076.99	Ca I	7	-	Sd	3074.151	Fe	40	25	-
3079.955	Ta	50 w	5 h	-	3076.973	Sm	10	-	-	3074.146	Pt II	-	5	Sh
3079.954	U	10	10	-	3076.971	Ne I	-	[150]	Ps	3074.097	Hf	25	1	-
3079.953	Sc	2	-	-	3076.971	Gd	25	25	-	3074.089	W	10	12	-
3079.943	Th	10	4	-	3076.90	Dy	10 s	-	-	3074.08	Os	125	20	-
3079.906	Ce II	8	-	-	3076.893	Ce	6	-	-	3074.06	V I	10 h	-	-
3079.879	Mo	40	3	-	3076.874	Hf	5	8	-	3074.00	Dy	3	-	m
3079.824	Ti I	2	-	-	3076.873	Cb	10 w	50	-	3073.989	Ce	8	-	-
3079.724	U	2	1	-	3076.777	Ru I	50	3	-	3073.987	Mg	8	10	-
3079.643	Ce	18 s	2	-	3076.751	Os	30	5	-	3073.983	Fe	40	25	-
3079.627	Mn	125	40	-	3076.719	Pt	1	8	-	3073.915	Sm	3	-	-
3079.572	Pt	3	2	-	3076.718	Sm	3	-	-	3073.9	Cd	-	[10]	Es
3079.560	Os	40	10	-	3076.70	Hf II	4	-	Me	3073.85	Tm	15	50	Me
3079.474	U	4	2	-	3076.688	V I	2	-	-	3073.823	V I	60	20 r	-
3079.453	Ce	10	-	-	3076.686	Ir I	10 h	2	-	3073.820	I	-	[10]	Ke
3079.398	Co I	80	2	-	3076.662	Bi I	20	18	-	3073.812	U	15 r	10 r	-
3079.369	Ta	3	2 h	-	3076.642	Rh I	3	-	-	3073.801	Cu I	70	20	-
3079.366	V I	10	-	-	3076.64	Cl	-	[15]	Jv	3073.687	W	9	6	-
3079.365	Nd	8	2	-	3076.616	V I	5	2	-	3073.68	Yb	1	3	-
3079.341	Dy	15	5	-	3076.57	Te	-	[25]	Bl	3073.679	Cr	35	25	-
3079.332	Cr	-	25	-	3076.54	Cr I	10	-	-	3073.542	Dy	30	8	-
3079.256	U	8	8	-	3076.531	Ta	3	1	-	3073.538	Ce	2	-	-
3079.222	W	8	5	-	3076.496	Sm II	2	2	-	3073.53	Te	-	[100]	Bl
3079.175	Ne I	-	[75]	Ps	3076.478	Yt	7	2	-	3073.521	Co I	60	2	-
3079.124	Ba	-	5 w	Sz	3076.455	Fe II	-	5	Do	3073.515	Ru	10	80	-
3079.10	Ca	1	3	Ad	3076.384	Ta	35	25 ws	-	3073.501	U	8	5	-
3079.056	Eu	3	-	-	3076.306	Re	5	-	-	3073.50	Tm	25	60	Me
3078.950	V	-	15	Me	3076.250	Ce	15	1	-	3073.387	Ta	18	5	-
3078.908	Ce	8	-	-	3076.20	S	-	[25]	Bl	3073.382	Mo	12	10	-
3078.875	Ne I	-	[75]	Ps	3076.173	W	7	3	-	3073.347	Er	12	4	-
3078.873	Er	8 s	2	-	3076.15	Cr	10	-	-	3073.336	Ru I	50	5	-
3078.86	Tb	30	80	Ed	3076.147	Re	25	-	-	3073.336	Ce	10	-	-
3078.857	Re I	25 w	-	-	3076.132	Ce	3	-	-	3073.281	Ir I	10	-	-
3078.832	Th	10	25 h	-	3076.08	U	4 d	4 d	-	3073.280	W	12	10	-
3078.774	I	-	[350]	Ke	3076.065	Eu	8	1	-	3073.244	Fe	2	-	-
3078.698	Fe II	4	15 h	Do	3076.04	Tb	30	3	Ed	3073.243	I	-	[7]	Ke
3078.686	Dy	25	-	-	3076.038	Yb	1	3	-	3073.24	Mo	-	20	-
3078.655	Yt II	6	8	-	3076.016	V II	-	15	-	3073.236	Cb	2	15	-
3078.645	Ti II	60	500 R	-	3075.933	Pt II	-	5	-	3073.228	Cr II	-	15	-
3078.576	Ir	5	5	-	3075.933	V I	20	-	-	3073.18	Ca	1	2	Ad
3078.50	Rb	-	[2]	Ok	3075.901	Zn I	150	50	IHz	3073.173	U	6	3	-
3078.463	Sc	2	-	-	3075.87	Ga	-	2	KI	3073.17	Xe II	-	[2]	Hu
3078.434	Fe I	80	50	-	3075.827	U	-	8	-	3073.126	Mn	75	20	-
3078.433	U	4	2	-	3075.721	Fe I	400	400	S	3073.085	Nd	4	2	-
3078.383	Os	125	15	-	3075.534	Ce	2	-	-	3073.085	Tm	60	150	Me
3078.35	Dy	12	1	-	3075.51	La II	2 h	2	Me	3073.01	Te	-	[10]	Bl
3078.315	Na II	12	[60]	Fr	3075.452	U	6	2	-	3072.971	Ti II	35	200 r	-
3078.27	In	-	10	Cx	3075.38	Sc II	4 l	-	Me	3072.965	Re	40	-	-
3078.267	Mo	10	-	-	3075.380	Nd	8	6	-	3072.886	Ce	20	1	-
3078.233	Er	5	1	-	3075.322	Ta	18	2	-	3072.877	Hf I	80	18	-
3078.232	Ta	50	5	-	3075.317	As I	60	35	Ro	3072.783	U	20	20	-
3078.113	Os	125	15	-	3075.309	Ru	10	40	-	3072.73	W II	3	12	-
3078.09	Cs	-	[6]	Bs	3075.30	Hf	15	-	Me	3072.71	V	70 r	40 r	-
3078.018	Fe	100	80	-	3075.269	V I	15	2 h	-	3072.7	Cs	-	[4]	Bs
3077.923	I	-	[10]	Ke	3075.244	Cb	1	15	-	3072.664	Co I	20	-	-
3077.882	Ir	2 h	-	-	3075.224	Ti II	40	300 R	-	3072.647	Sm	2	2	-
3077.853	V	5 h	-	-	3075.219	W	4	2	-	3072.60	Tb	3	15	Ed

3072.5—3064.9 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3072.574	Gd	20	25	-	3069.970	Mo	20	1	-	3067.443	Ce	40	-	-
3072.52	Er	15	6	-	3069.945	Re	125	-	-	3067.414	Hf	3	10	-
3072.512	Cb	2	15	-	3069.936	Os	125	15	-	3067.41	W II	2	5	-
3072.462	Cr	-	15	-	3069.881	U	5	3	-	3067.390	Re I	60	-	-
3072.453	Re	5	-	-	3069.82	Rb	-	[5]	Ok	3067.37	Yb	-	3	-
3072.448	U	6	3	-	3069.790	Mo	15	-	-	3067.305	Rh	80	1	-
3072.406	Cb	5	2	-	3069.76	In II	-	[18]	Ps	3067.30	Xe II	-	[20]	Hu
3072.391	Ce II	20	-	-	3069.73	Cs	-	[4]	Bs	3067.247	U	-	5	-
3072.351	Ta	2 s	1 h	-	3069.721	Ce	6	-	-	3067.244	Fe I	300	300	S
3072.344	Co I	200 R	100	-	3069.716	Nd	8	4	-	3067.214	Ne	-	[5]	Ps
3072.336	U	6	6	-	3069.706	Ir I	25	5	-	3067.2	Cs	-	[4]	Bs
3072.335	Ru	5	40	-	3069.690	Sm	6	3	-	3067.16	Cr II	25	40	-
3072.335	Fe	8	7	-	3069.680	Cb	4	15	-	3067.132	Ge I	2	-	-
3072.334	Yt	8	8	-	3069.676	Hf II	3	-	-	3067.124	Zr I	5	4	-
3072.305	Cb	2	1	-	3069.645	V I	30	10	-	3067.120	Fe I	6	6	-
3072.254	I	-	[7]	Ke	3069.644	Ce	18 s	-	-	3067.116	V I	15	-	-
3072.18	Cb	1	5	-	3069.518	Cb	-	3	-	3067.009	Ca I	6	2	-
3072.14	Ga	-	3	KI	3069.517	Mo	20	-	-	3067.007	Ge	60	40	-
3072.13	Er	6	1	-	3069.494	U	5	1	-	3067.004	Fe	2	2	-
3072.120	Th	10	8	-	3069.465	W	5	2	-	3066.994	Dy	20	4	-
3072.107	Ti II	25	125	-	3069.453	Fe	6	4	-	3066.98	W II	4	12	-
3072.071	Ta	2 wh	-	-	3069.45	La II	2	3	Me	3066.95	Eu	10	-	-
3072.062	Zn I	200	125	I Hz	3069.409	Sm	3	-	-	3066.89	A	-	[3]	Rt
3072.05	Fe	6	3	-	3069.34	Fe	2	1	-	3066.89	S	-	[35]	Bl
3071.962	Co	80	2	-	3069.320	Ce	4	-	-	3066.870	U	6	6	-
3071.937	Pt I	60	15	-	3069.284	W II	6	15	-	3066.833	Os	30	10	-
3071.920	Dy	25	4	-	3069.258	Th	10	6	-	3066.80	V	-	2	-
3071.813	P	-	[30]	Gu	3069.25	Yt II	2 h	8 h	-	3066.757	Ta	10	3	-
3071.816	U	3	2	-	3069.237	Ta	150	70	-	3066.741	Zr I	3	-	-
3071.753	Re	10 hl	-	-	3069.229	Er	15	1	-	3066.74	Pr	1	3	-
3071.721	U	5	4	-	3069.184	Pd II	-	2 h	-	3066.72	Kr II	-	[2]	Me
3071.72	W II	8	15	-	3069.184	Ru I	30	1	-	3066.62	Cs	-	[10]	Bs
3071.648	Cd II	-	2	-	3069.182	Hf	15	-	-	3066.598	Os	20	8	-
3071.617	Ce	18 s	1	-	3069.169	U	4	4	-	3066.55	In	-	6	-
3071.6	air	-	5	-	3069.147	Ce	3	-	-	3066.536	Na II	2	[20]	Fr
3071.591	Ba I	100 R	50 R	-	3069.122	Os	30	10	-	3066.53	V I	15	-	-
3071.59	Yb	-	3	-	3069.099	Eu	7	-	-	3066.514	Ti II	7	20	-
3071.587	Ca I	5	1	-	3069.094	Ir I	25	10	-	3066.483	Fe	60	40	-
3071.572	Cr II	-	12	-	3069.050	Mo	5	-	-	3066.442	Ni I	5	-	-
3071.56	Cb	10	50	-	3069.031	Cb	4	3	-	3066.42	Tm	6	20	Me
3071.499	Ru	20	-	-	3069.02	Tb	15	15	Ed	3066.420	Th	10	3	-
3071.483	U	4	1	-	3068.994	U	5	3	-	3066.399	Mo	15	-	-
3071.482	Nd	2	-	-	3068.987	Th	12	8	-	3066.396	Ru	10	25	-
3071.439	Mo	25	3	-	3068.98	I	-	[18]	Bl	3066.380	Ce	18	-	-
3071.426	Nd	4 d	2	-	3068.96	La II	2 h	3	Me	3066.375	V I	400 r	125 r	-
3071.39	Xe	-	[3 h]	Hu	3068.94	Tb	-	[50]	Bl	3066.354	Ti II	15	40	-
3071.365	Cb	2	-	-	3068.93	Cb	-	5	-	3066.286	U	12 r	8	-
3071.35	Cl II	-	[40]	Ks	3068.906	Cu I	15	-	-	3066.225	Er	15	2	-
3071.327	U	5	1	-	3068.9	Rn	-	[100]	Wo	3066.22	Th	5	10 h	-
3071.30	Cr I	15	1	-	3068.890	Ir I	40	20	-	3066.220	Ti II	25	18	-
3071.274	Sm	8	4	-	3068.887	Rh	2	1	-	3066.162	Al	25	25	Gn
3071.267	Fe II	1	2	-	3068.885	Pd II	-	2 h	-	3066.133	Ce	3	-	-
3071.242	Ti II	12	70	-	3068.82	Ca	-	2	-	3066.116	Os	50	10	-
3071.2	Sn	-	2 Wh	Ar	3068.817	Ce	2	-	-	3066.103	Pd I	150	2	-
3071.178	Cb	3	15	-	3068.790	Cd II	-	2 h	-	3066.097	Cb	2	30	-
3071.165	Re	50	-	-	3068.765	Re	15	-	-	3066.019	Mn	75	-	-
3071.146	Fe II	2	2	-	3068.678	Ce	20	-	-	3066.019	Sm	6	2	-
3071.110	Ce II	20 s	1	-	3068.650	U	8	10	-	3066.00	Yt II	3	8 h	-
3071.08	Ne II	-	[4]	Bn	3068.649	Gd	50	50	-	3065.980	U	8	4	-
3071.027	Rh I	20	-	-	3068.642	Mo	15	-	-	3065.935	Th	12	10	-
3070.992	U	8	8	-	3068.5	Pb II	-	[10]	Ea	3065.780	Ce	6	-	-
3070.918	Ir	3	-	Ab	3068.28	Yb	-	3	-	3065.775	Sm II	5	3	-
3070.901	Cb	3	15	-	3068.261	Ru	60	8	-	3065.69	Tb	3	8	Ed
3070.895	Mo	40	3	-	3068.176	Fe I	150	150	-	3065.668	Ne	-	[5]	Ps
3070.892	V I	10	2 h	-	3068.056	Cb	-	10	-	3065.663	U	2	1	-
3070.873	Sm	2	2	-	3068.047	I	-	[5]	Ke	3065.605	V	2	35	-
3070.857	Co I	5	-	-	3068.024	Zr II	2	-	-	3065.578	Re I	5	-	-
3070.821	Th	12	10	-	3067.997	Mo	30	1	-	3065.548	U	2	3	-
3070.76	Rb	-	[15]	Ok	3067.944	Fe	15	10	-	3065.395	Ce	5	-	-
3070.752	Co I	5	-	-	3067.939	Ir	2 h	-	-	3065.315	Fe II	-	60	Do
3070.743	Er	15	4	-	3067.895	Ce	6	-	-	3065.306	Pd I	10	100	-
3070.694	Fe II	-	7	-	3067.866	W	3	12	-	3065.282	Re	5	-	-
3070.678	U	3	5	-	3067.83	Lu	-	3 h	Me	3065.264	Cb	10	200	-
3070.637	Ir	3	-	-	3067.8	Cs	-	[4]	Bs	3065.25	Rb	-	[2]	Ok
3070.619	Mo	-	25	-	3067.784	Eu	7	-	-	3065.211	Zr II	5	2	-
3070.6	Rn	-	[5]	Pe	3067.758	U	8	6	-	3065.206	Sm	3	2	-
3070.539	Ta	5 h	1 h	-	3067.755	Sn	10	15	-	3065.198	U	6	4	-
3070.481	Hf	5	-	-	3067.734	Th	12	20	-	3065.14	Dy	4	1 h	-
3070.394	Sm	4	3	-	3067.73	In	-	3	Sq	3065.106	Sc II	12 d	25	-
3070.278	U	12	6	-	3067.716	Bi I	3000 hR	2000 wh	-	3065.067	Cr	20	50	-
3070.266	Mn	100	25	-	3067.672	Sm	15	15	-	3065.048	Yb	4	30	-
3070.260	Pt	3	-	-	3067.672	Eu	8	-	-	3065.042	Mo	30	10	-
3070.12	V	-	50	-	3067.642	Mo	10	50	-	3065.008	Sm	4	2 h	Kn
3070.05	Tb	15	15	Ed	3067.568	W II	3	12	-	3064.97	Er	3	1	-
3070.00	Hf II	-	5 h	-	3067.533	Cb	-	15	-	3064.955	Cd	-	15 h	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3064.937	W	10 s	7	-	-	3062.44	Pb	-	10	Sx	-	3059.909	Gd	2	-	-	-
3064.91	Yb	2	2	-	-	3062.438	Mo	15	-	-	-	3059.820	W	6	3	-	-
3064.908	U	1	2	-	-	3062.233	Fe II	2	400	-	-	3059.743	Ir	3	-	-	-
3064.84	Er	7	-	-	-	3062.201	Co I	60	1	-	-	3059.741	Ti II	8	35	-	-
3064.838	Ru	70	60	-	-	3062.192	Os	100	30	-	-	3059.739	Ce	12	-	-	-
3064.790	Ir I	5	-	-	-	3062.19	Rh	-	2	-	-	3059.7	Rn	-	-	[20]	Pe
3064.712	Pt I	2000 R	300 R	-	-	3062.190	Dy	12	6	-	-	3059.69	Cl	-	-	[5]	Jv
3064.68	Hf II	10	30	-	-	3062.18	K II	-	[20]	Bn	-	3059.642	Pt I	25	5	-	-
3064.634	Zr II	5	3	-	-	3062.179	V	-	4 h	-	-	3059.552	U	5	3	-	-
3064.623	Ni I	200 r	50	-	-	3062.121	U	2	6	-	-	3059.521	Cr II	8	60	-	-
3064.6	Rn	-	[40]	Pe	-	3062.119	Mn	75	20	-	-	3059.496	Yt	2 h	2 h	-	-
3064.600	Re	20	-	-	-	3062.102	Mo	-	3	-	-	3059.48	Dy	6	4	-	-
3064.591	U	4	3	-	-	3062.09	Tb	3	3	Ed	-	3059.431	Pd II	-	150 w	-	-
3064.555	Mo	15	-	-	-	3062.06	Tm	10	20	Me	-	3059.356	Rh I	4	-	-	-
3064.533	Cb	5 w	200	-	-	3062.06	A I	-	[3]	Me	-	3059.299	Cb	2	10	-	-
3064.509	Ir I	20	1 h	-	-	3062.05	Ca I	1 h	2	Sd	-	3059.266	U	4	3	-	-
3064.45	Ga	-	2	Kl	-	3062.048	Ru	8	6 h	-	-	3059.22	Cd II	-	2	-	-
3064.38	Hf II	-	2	Me	-	3062.009	U	5	1	-	-	3059.169	Ru	50	-	-	-
3064.372	Na II	2	[20]	Fr	-	3061.997	Ta	2	-	-	-	3059.16	Ne II	-	-	[7]	Bn
3064.370	Co I	100	-	-	-	3061.959	Cb	-	10	-	-	3059.11	I	-	-	[5]	Bl
3064.304	Al	20	20	Gn	-	3061.824	Fe	5	3	-	-	3059.086	Fe I	600 r	400	S	-
3064.279	Mo	80	10	-	-	3061.819	Co I	200 R	125	-	-	3059.07	S	-	-	[8]	Bl
3064.217	Fe	4	4	-	-	3061.81	Cr	10	2	-	-	3059.00	Eu	20	-	-	-
3064.19	Ho	4	4	Ex	-	3061.80	Tb	3	-	Ed	-	3058.99	Tm	10	30	Me	-
3064.182	U	6	3	-	-	3061.703	Th	12	15	-	-	3058.98	U	8 d	5 d	-	-
3064.09	Tb	15	8	Ed	-	3061.683	Er	15	2	-	-	3058.97	Pr	-	5	-	-
3064.04	Dy	8	-	-	-	3061.68	W II	2	12	-	-	3058.786	Ru I	30	3	-	-
3064.024	Ce	15	-	-	-	3061.652	Cr I	20	3	-	-	3058.786	Re I	50	-	-	-
3064.01	Tm	15	20	Me	-	3061.616	U	12	10	-	-	3058.66	Os I	500 R	500	-	-
3063.97	W II	2	20	-	-	3061.614	Re	20	-	-	-	3058.655	Ru I	30	3	-	-
3063.937	Ni II	-	2	-	-	3061.586	Mo	50	3	-	-	3058.653	Ir	-	-	-	-
3063.933	Fe	40	30	-	-	3061.56	Sm	5 d	3	-	-	3058.636	Ta	50	3	-	-
3063.925	I	-	[10]	Ke	-	3061.54	Xe II	-	[8]	Hu	-	3058.6	Cs	-	-	[6]	Bs
3063.881	U	8	4	-	-	3061.51	Kr	-	[6 h]	Me	-	3058.597	Mo	20	-	-	-
3063.876	Ta	18	3	-	-	3061.506	Dy	9	-	-	-	3058.551	Ce	12	-	-	-
3063.839	Cr	5	12	-	-	3061.408	Ir I	25	2	-	-	3058.493	Fe	3	3	-	-
3063.790	Cb	4	10	-	-	3061.404	Cb	-	5 h	Me	-	3058.431	Th	10	10	-	-
3063.78	Hf	25	1	-	-	3061.346	Zr II	5	3	-	-	3058.345	Cr II	-	30	-	-
3063.776	Ce	2	-	-	-	3061.32	Pb	-	2	Sx	-	3058.15	Ga	-	4 w	Kl	-
3063.734	V I	35	1 h	-	-	3061.287	U	4	1	-	-	3058.142	Th	8	3	-	-
3063.730	Sc	2 h	-	-	-	3061.28	Er	5	1 h	-	-	3058.141	F II	-	-	[30]	Di
3063.728	Fe	3	3	-	-	3061.24	Cs	-	[6]	Bs	-	3058.107	Ce	5	-	-	-
3063.726	Ir	4	-	-	-	3061.237	Cb	4	2	-	-	3058.10	As II	-	15	-	Ro
3063.725	Cd	2	2	-	-	3061.223	Re	3	-	-	-	3058.090	Ti II	12	70	-	-
3063.7	Cs	-	[4]	Bs	-	3061.218	Ce	10	-	-	-	3058.00	Cl II	-	-	[40]	Ks
3063.695	Ne I	-	[150]	Ps	-	3061.141	Sm	10	-	-	-	3057.951	Ir	3	-	-	-
3063.69	Yb	3	5	-	-	3061.14	Tm	10	30	Me	-	3057.91	U	20 d	20 d	-	-
3063.573	Zr I	5	1	-	-	3061.110	Cb	3	2	-	-	3057.904	Th	8	6	-	-
3063.57	Kr II	-	[3 h]	Me	-	3061.021	Co I	15	-	-	-	3057.90	Lu	3	150 h	Me	-
3063.563	Fe	2	2	-	-	3060.988	Fe I	50	35	-	-	3057.889	Rh	10	-	-	-
3063.558	Ta	70	15	-	-	3060.94	A	-	[10]	Rt	-	3057.88	Mo	-	30	-	-
3063.521	U	8	3	-	-	3060.93	V I	7	2	-	-	3057.861	Cr	-	30	-	-
3063.51	Lu	20 h	-	Me	-	3060.928	Mo	6	6	-	-	3057.86	V	-	3 h	Me	-
3063.502	Ti II	5	25	-	-	3060.86	S	-	[8]	Bl	-	3057.853	Re	8	-	-	-
3063.49	Ca	2	3	Ad	-	3060.84	Kr II	-	[30 whs]	Me	-	3057.790	Fe	2	2	-	-
3063.44	A I	-	[5]	Ms	-	3060.838	Ir I	25	1	-	-	3057.75	Cl	-	-	[8]	An
3063.415	Cu I	300	50	-	-	3060.792	Fe	4	4	-	-	3057.659	Re I	25	-	-	-
3063.41	W II	-	20	-	-	3060.777	Mo	25	15	-	-	3057.65	Fe	2	2	-	-
3063.389	Ce	4	-	-	-	3060.68	U	5 d	8 d	-	-	3057.642	Th	10	6	-	-
3063.36	Ne	-	[4]	Bn	-	3060.653	Dy	30	10	-	-	3057.638	Ni I	400 R	125	-	-
3063.280	Ti II	1	8 h	-	-	3060.645	Fe	2	2	-	-	3057.559	Mo	25	1	-	-
3063.258	Cr	-	8	-	-	3060.538	Fe	6	6	-	-	3057.52	Er	5	-	-	-
3063.247	V	30	80 r	-	-	3060.531	Sc II	2 h	1 h	-	-	3057.51	Cd	-	2	-	-
3063.181	W	10	9	-	-	3060.50	Rb I	12	-	Bv	-	3057.446	Fe I	400	400	S	-
3063.18	Te	-	[10]	Bl	-	3060.492	Ru	8	50	-	-	3057.395	Ti II	5	15	-	-
3063.152	Fe	2	1	-	-	3060.460	V I	150 r	100 r	-	-	3057.388	Ne I	-	-	[250]	Ps
3063.132	Th	-	10 h	-	-	3060.452	Ti	6	3	-	-	3057.383	Ce	5	-	-	-
3063.131	U	-	4	-	-	3060.447	Th	10	1	-	-	3057.342	Ru I	30	2	-	-
3063.130	Cb	4 d	15	-	-	3060.400	Cb	2	2	-	-	3057.278	Ir I	35	2	-	-
3063.12	Yb	1	4	-	-	3060.324	Re	25	-	-	-	3057.219	Zr II	2	3	-	-
3063.09	Cl	-	[10]	Jv	-	3060.305	Os	100	30	-	-	3057.154	Al	15	18	-	-
3063.026	Th	25 d	25 d	-	-	3060.30	Dy	9	1	m	-	3057.12	Ta	25 w	125	-	-
3063.010	Ce	40	10	-	-	3060.288	Ta	125	35 W	-	-	3057.083	F II	-	-	[20]	Di
3062.892	W	6	5	-	-	3060.28	Cd	4	5	-	-	3057.07	V	-	-	5 w	-
3062.871	Fe	4	2	-	-	3060.27	Ca	-	3	Ad	-	3057.03	Cb	-	10	-	-
3062.711	U	4	1	-	-	3060.230	Ru	20	50	-	-	3057.016	Hf	70	10	-	-
3062.7	Cs	-	[4]	Bs	-	3060.182	Th	12	15	-	-	3056.990	Mn	2	-	-	-
3062.698	V II	5	20	-	-	3060.12	Cs	-	[6]	Bs	-	3056.97	Dy	12	4	-	-
3062.695	Os	20	8	-	-	3060.113	Zr II	5	3	-	-	3056.901	Os	20	8	-	-
3062.65	Lu	-	2 h	Me	-	3060.055	U	8	12	-	-	3056.865	Ru	12	150	-	-
3062.620	Dy	25	10	-	-	3060.052	Co I	150	1	-	-	3056.802	Fe II	4	25	Do	-
3062.604	W	10	9	-	-	3060.00	Dy	10	5	m	-	3056.777	Ce II	40	3	-	-
3062.58	Ne	-	[4]	Bl	-	3059.960	F II	-	[60]	Di	-	3056.740	Ti II	12	70	-	-
3062.536	U	12	15	-	-	3059.933	Al	8	10	Gn	-	3056.731	Mo	20	-	-	-
3062.468	Os	20	8	-	-	3059.91	La II	2	7	Me	-	3056.723	U	12	6	-	-

3056.7—3048.8 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3056.72	Lu	50	100	Me		3053.89	V	10	60 r	—		3051.139	U	15 r	10 r	—	
3056.698	Nd	8	4	—		3053.887	U	1	2	—		3051.12	Tb	15	8	Ed	
3056.635	Ir I	2 h	—	—		3053.880	Cr I	3 r	150	—		3051.108	Nd	6	2	—	
3056.619	Cr II	—	8	—		3053.872	Rh I	8	—	—		3051.093	Ir I	5	—	—	
3056.615	Ta	1 wh	70 l	—		3053.78	Er	6	1	—		3051.003	Sm	6	2	—	
3056.615	Cb	3	3	—		3053.74	Cl II	—	[10]	—	Ke	3050.989	Th	10	10	—	
3056.6	Rn	—	[5]	Pe		3053.71	Tm	7	30	Me		3050.98	Xe II	—	[2]	Hu	
3056.58	In	—	10	—		3053.701	Ce	2	—	—		3050.932	Co I	60	—	—	
3056.49	Xe II	—	[12]	Hu		3053.7	Bi II	—	[60]	—	MI	3050.890	V I	30	—	—	
3056.459	Re	2	—	—		3053.673	Cr	—	5	—		3050.83	Er	5	1 h	—	
3056.456	Mn	3	—	—		3053.664	Na II	8	[60]	Fr		3050.819	Ni I	1000 R	—	—	
3056.41	Cd	1	2	Vs		3053.65	V I	90 r	—	—		3050.819	Sm	5	8	—	
3056.338	Yt	5	—	—		3053.637	Cb	1	30	—		3050.818	Rh	2	—	—	
3056.334	V I	125 r	70 r	—		3053.636	Sm	2	—	—		3050.8	Cs	—	[6]	Bs	
3056.32	Hg II	—	[10]	Ps		3053.631	Re	30	—	—		3050.758	Hf	50	10	—	
3056.306	Sc	4	—	—		3053.630	Mo	20 W	—	—		3050.73	Tm	50	150	Me	
3056.28	A I	—	[3]	Ms		3053.596	Ir I	12	1 h	—		3050.730	V	1	50	—	
3056.251	U	3	1	—		3053.577	Gd	5	3	—		3050.73	Ho	—	4	Ex	
3056.25	Fe	8	4	—		3053.55	Tb	8	30	Ed		3050.587	Ce	12	—	—	
3056.229	W	6	8	—		3053.5	Cs	—	[4]	Bs		3050.582	I	—	[7]	Ke	
3056.157	Na II	35	[60]	Fr		3053.49	As II	—	15	Ro		3050.502	Co	4	6	—	
3056.130	Ce	4	—	—		3053.464	Mo	4	6	—		3050.500	Co I	60	—	—	
3056.099	Th	10	4	—		3053.44	Fe I	80	50	—		3050.46	Hg I	2 h	—	Cn	
3056.071	Pt II	1	5	Sh		3053.387	V II	10	90 r	—		3050.400	V I	30	1	—	
3056.06	Tm	40 d	100	Me		3053.36	W II	5	—	—		3050.386	Os	100	50	—	
3056.058	Ru	30	1	—		3053.302	U	—	15	—		3050.35	Pr	2	4	—	
3506.04	Cs	—	[6]	Bs		3053.289	Mo	20	—	—		3050.322	Zr I	3	—	—	
3056.01	Kr II	—	[30 wh]	Me		3053.289	Ce	8	—	—		3050.300	Ce	8	—	—	
3055.94	V	—	5 w	—		3053.27	Yt II	10 h	20 h	—		3050.214	Mo	10	1	—	
3055.884	U	4	2	—		3053.24	Tb	8	3	Ed		3050.198	U	12	8	—	
3055.71	Fe	10	6	—		3053.20	A	—	[3]	Rt		3050.193	Ru	5	—	—	
3055.65	Rh	2 h	2	—		3053.17	Te	—	[10]	Bl		3050.137	Cr	10	150	—	
3055.592	U	2	2	—		3053.1	Cd	—	[10]	Es		3050.101	Ta	35	5	—	
3055.524	Sm	3	1	—		3053.088	Cb	3	5	—		3050.1	Rn	—	[15]	Pe	
3055.522	Cb	2	100	—		3053.070	Fe	100	80	—		3050.084	Pd II	—	100 h	—	
3055.472	Cr	—	20	—		3053.02	Mo	8	—	—		3050.079	Al	18	10	Gn	
3055.44	Hf II	15	15	—		3053.02	Si	—	5	Sy		3050.018	Ir I	5	—	—	
3055.397	W	9	10	—		3053.015	Ce	4	—	—		3050.01	Te	—	[10]	Bl	
3055.370	I	—	[350]	Ke		3052.992	Cb	2	3	—		3050.004	W	6	9	—	
3055.368	Fe II	—	2	Do		3052.929	Sc II	10	15 hl	—		3049.99	Er	10	1	—	
3055.325	Ca I	5 h	—	—		3052.911	U	12	8	—		3049.883	Cr I	20 r	—	—	
3055.323	Mo	50	5	—		3052.84	Re	2 w	—	—		3049.866	Th	10	10	—	
3055.318	Pt I	4	—	—		3052.822	W	6	3	—		3049.86	W II	2	10	—	
3055.31	Kr II	—	[3]	Me		3052.814	Zr I	3	—	—		3049.842	U	8	1	—	
3055.29	Pd II	—	3 h	—		3052.729	Cb	2	3	—		3049.803	Re I	4 w	—	—	
3055.263	Fe I	200	150	I		3052.684	Ce	4	—	—		3049.71	I	—	[3]	Ke	
3055.243	Ce	18	3	—		3052.559	Mo	20	—	—		3049.691	W II	12	8	—	
3055.22	Yt II	8	50	m		3052.534	Ta	—	70 l	—		3049.645	Th	10	10	—	
3055.211	Os	80	15	—		3052.53	Tm	10	25	Me		3049.584	U	4	2	—	
3055.15	Yb	1	3	—		3052.461	U	8	10	—		3049.558	Ta	150	30	—	
3055.098	Ce	4	—	—		3052.44	Te	—	[5]	Bl		3049.525	Cb	—	150	—	
3055.086	U	5	2	—		3052.418	Os	40	12	—		3049.456	Os	80	15	—	
3054.968	Os	50	10	—		3052.342	Ru I	8	—	—		3049.44	C II	—	2 h	En	
3054.937	Ru I	70	12	—		3052.324	Dy	18	4	—		3049.435	Ir I	25	10	—	
3054.93	Eu	400 w	3	—		3052.320	Mo	10	50	—		3049.39	La II	3	3	Me	
3054.904	Re I	40	—	—		3052.240	Ir	3	1	—		3049.38	Ho	6	4	Ex	
3054.88	Ho	—	4 h	Ex		3052.232	Re	2	—	—		3049.36	Fe	25	8	—	
3054.835	Zr II	15	25	—		3052.229	Cr	20	10	—		3049.36	Te	—	[35]	Bl	
3054.798	Ta	3	1	—		3052.194	V I	50	5	—		3049.354	W	7	5	—	
3054.763	Mo	—	3	—		3052.18	Tb	3	8	Ed		3049.329	Zr I	6	1 h	—	
3054.73	U	10	6	—		3052.161	Ir I	8	1	—		3049.31	Eu	3 d	—	—	
3054.724	Co I	60	—	—		3052.15	Pd II	—	150 h	—		3049.29	Hf	15	—	—	
3054.697	Al	20	10	Gn		3052.147	Nd	10	6	—		3049.29	Er	4	1	—	
3054.69	Ne II	—	[18]	Bn		3052.000	Zr I	2	—	—		3049.29	Mo	3	—	—	
3054.613	Ce	2	—	—		3051.994	Cb	2	4	—		3049.23	Kr II	—	[8 whs]	Me	
3054.56	Cs	—	[4]	Bs		3051.987	Mg I	2	—	—		3049.217	Rh I	5	—	—	
3054.52	Hf II	15	15	—		3051.975	Ce	10	2	—		3049.171	Ru	2	70	—	
3054.460	Ir	2	—	—		3051.931	W	10 d	6	—		3049.133	Dy	25	4	—	
3054.443	Ce	3	—	—		3051.924	Ce	10	—	—		3049.095	Th	20	20	—	
3054.42	Yt	3	2	—		3051.904	Ta	3 h	3	—		3049.075	Ru I	6	—	—	
3054.42	Er	10	2	—		3051.796	Th	10	10	—		3049.042	Os	40	8	—	
3054.388	U	3	4	—		3051.679	Rh I	3	—	—		3049.03	Eu	15 W	—	—	
3054.362	Mn	75	40	—		3051.676	Cb	2	3	—		3049.011	Fe II	4	3	Do	
3054.316	Ni I	400 R	100	—		3051.597	Ru I	30	—	—		3049.01	Ca I	5	2 h	Sd	
3054.310	U	2	4	—		3051.43	Rb II	—	[2]	Ok		3049.003	W	8	9	—	
3054.3	Rn	—	[250]	Pe		3051.425	U	5	5	—		3048.932	Ce	2	—	—	
3054.27	Se	—	[20]	Bl		3051.39	V	—	5	—		3048.92	Xe	—	[2 h]	Hu	
3054.24	V	—	5	—		3051.341	Cb	1	10	—		3048.908	U	6	8	—	
3054.20	Cs	—	[4]	Bs		3051.30	U	4 d	6 d	—		3048.892	V	10	50	—	
3054.132	Co I	18	—	—		3051.291	W II	10	30 l	—		3048.89	Rh I	2	3	—	
3054.093	U	6	4	—		3051.287	Ce	2	—	—		3048.888	Co I	150 r	—	—	
3054.05	Tm	30	60	Me		3051.25	In I	—	[15]	Sy		3048.864	Ta	100	15	—	
3054.02	La II	2	6	Me		3051.166	Os	80	15	—		3048.864	Mn	25	—	—	
3054.014	W	9	8	—		3051.162	Ce II	6	—	—		3048.83	Mo	—	5	—	
3053.99	Ho	6	4 h	Ex		3051.149	Ir I	5	1	—		3048.82	Tm	20	40	Me	

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
3048.82	Cd	—	[2 h]	Tk	3046.447	W	12	10	—	3043.713	Ce	3	—	—
3048.785	Ru I	60	9	—	3046.404	Mo	—	3	—	3043.70	Si	—	5	Sy
3048.766	Ti II	2	35	—	3046.38	Dy	4	—	—	3043.692	Mo	20	—	—
3048.666	Ir I	12	—	—	3046.27	Xe II	—	[12]	Hu	3043.65	Tb	8	8	Ed
3048.663	W II	9	12	—	3046.266	Mn II	1	6 h	Cz	3043.638	Os	60	12	—
3048.66	Tm	6	10	Me	3046.242	Ru	20	—	—	3043.6	bh B	100	—	L
3048.65	V	—	2	—	3046.24	Se II	—	[35]	Bl	3043.555	V I	60	40	—
3048.634	Cb	—	5	—	3046.19	Rh I	2	—	—	3043.528	Sm	2	1	—
3048.63	U	15	8	—	3046.127	Ru	4	6	—	3043.505	Os	100	15	—
3048.591	Re	8	—	—	3046.124	Ce	6	—	—	3043.356	Mn	40	40	—
3048.517	Ce	3	—	—	3046.105	U	2	2	—	3043.354	Ca	1	2	—
3048.50	Xe II	—	[2 h]	Hu	3046.10	A	—	[5]	Rt	3043.35	Ba	—	4	—
3048.495	Ru	50	5	—	3046.08	Hf II	25	25	Me	3043.447	Mo	15	15 h	—
3048.455	Fe	100	8	—	3046.004	Re	10	—	—	3043.44	Dy	18	2	—
3048.437	Ce	3	—	—	3045.964	Ta	150	50 w	—	3043.40	In	—	3	Sq
3048.425	Zr II	8	2 h	—	3045.949	Ne I	—	[7]	Ps	3043.277	Cb	1	5	—
3048.41	Dy	6	—	—	3045.9	Cs	—	[4]	Bs	3043.269	Ce	3	—	—
3048.40	Er	9	1	—	3045.829	Zr I	9	1 h	—	3043.251	Zr II	4	—	—
3048.371	U	—	10	—	3045.82	Pr	—	3	—	3043.249	Th	10	3	—
3048.36	As II	—	10	Ro	3045.808	Mn	25	12	—	3043.144	Dy	30	10	—
3048.308	Ce	3	—	—	3045.792	Ce	4	—	—	3043.143	Mn	12	—	—
3048.283	Ta	10	1	—	3045.777	Os	30	10	—	3043.124	V I	60	7	—
3048.243	Zr II	2	2	—	3045.773	Rh I	30	—	—	3043.094	Ce	10 w	—	—
3048.215	V	10	125 r	—	3045.75	Ca I	2 h	—	Sd	3043.068	Th	12	12	—
3048.204	Cb	1	50	—	3045.719	Mo	1	10	—	3043.015	W	7	4	—
3048.17	Xe	—	[3]	Hu	3045.714	Sc II	15	25	—	3043.0	Rn	—	[5]	Wo
3048.123	W	7	5	—	3045.710	Ru I	60	12	—	3042.957	Mo	10	—	—
3048.113	Co I	25	—	—	3045.672	Ce	6	—	—	3042.831	Ru I	60	5	—
3048.096	Cb	10	2	—	3045.654	Ir	8	2 h	—	3042.790	Cb	1	10 wh	—
3048.05	Mo	1	25	—	3045.594	Fe	10	7	—	3042.789	Cr II	1	100	—
3047.97	Rh	2	—	—	3045.593	Mn	40	20	—	3042.739	Os	20	50	—
3047.93	In	—	3	Sq	3045.593	Na II	—	[40]	Fr	3042.733	Mn	25 r	25	—
3047.880	U	2	4	—	3045.58	Ne II	—	[12]	Bn	3042.733	U	4	8	—
3047.821	Mo	15	1	—	3045.580	W	7	6	—	3042.665	Fe I	300	200	—
3047.788	Ir I	15	—	—	3045.568	Th	12	15	—	3042.65	Yb	5	50	Me
3047.784	Ce	2	—	—	3045.56	Hg	—	[10]	Ps	3042.646	Ir	25	15	R
3047.768	Cr II	3	15	—	3045.545	Cb	3 h	2	—	3042.637	Pt I	200 R	250 R	—
3047.76	Xe	—	[6 h]	Hu	3045.460	U	5	5	—	3042.540	Ti I	5	2 h	—
3047.709	Ru	5	12	—	3045.369	Yt I	10	6	—	3042.50	Tb	3	15	Ed
3047.610	Dy	10	—	—	3045.323	Os	30	12	—	3042.484	Co I	80 r	8	—
3047.605	Fe I	800 r	500 r	S	3045.25	Xe II	—	[20]	Hu	3042.475	Ru	70	12	—
3047.572	W	10	10	Bk	3045.231	Mo	8	—	—	3042.439	Ta	1	20	—
3047.571	U	15	20	—	3045.2	Rn	—	[60]	Pe	3042.35	Tm	50	—	Me
3047.57	Ne II	—	[25]	Bn	3045.085	Ti	2	50 wh	—	3042.3	Ca	—	[4]	Bs
3047.503	Ce	2	—	—	3045.078	Fe	150	100	—	3042.297	Re	10	—	—
3047.455	Cr	25	6	—	3045.006	Ni I	200	10	—	3042.279	W	7	5	—
3047.40	Yt	5	—	—	3045.00	Cl II	—	[10]	Ks	3042.264	V	6	80	—
3047.363	Sm	5	3	—	3044.991	U	2	5	—	3042.12	Xe	—	[6 h]	Hu
3047.36	Lu	3 h	—	Me	3044.97	Tb	15	8	Ed	3042.077	Ce	3	—	—
3047.312	Mo	50	4	—	3044.936	V I	30	15	—	3042.060	Ta	5	100	—
3047.280	Re	30 w	—	—	3044.910	Os	100	12	—	3042.022	Fe I	125	100	—
3047.207	Ce	2	—	—	3044.843	Fe II	—	12	Do	3041.995	Re	15	—	—
3047.16	K II	—	[5]	Bn	3044.83	Yb	1	3	—	3041.99	Cb	—	5 w	—
3047.157	Ir I	50	20	—	3044.83	Yt	3 h	—	—	3041.919	Ru I	30	1	—
3047.153	Rh	15	3	—	3044.763	Cb	2	30	—	3041.891	Cb	1	5 wh	—
3047.14	I	—	[10]	Bl	3044.75	Xe II	—	[6]	Hu	3041.866	W	10	9	—
3047.117	Mo	15	—	—	3044.733	Mo	10	—	—	3041.864	U	6	3	—
3047.11	Yt	6	3	—	3044.71	Se	—	[8]	Bl	3041.86	V	5	—	—
3047.1	Li	—	6	An	3044.705	Sm	3	5	—	3041.853	Ir	7	1 h	—
3047.05	Sn II	—	8	—	3044.567	Mn	100 wh	40	—	3041.763	Ce	5	—	—
3047.050	Fe	2	3	—	3044.547	Dy	6	4	—	3041.74	Cr	2	125	—
3047.048	Yb	1	6	—	3044.41	Ho	—	4 h	Ex	3041.738	Fe I	100	80	—
3047.042	U	3	1	—	3044.408	Os	50	10	—	3041.737	W	8	7	—
3047.040	Ag	—	5 wh	—	3044.395	Ce	15	—	—	3041.702	Mo	40	5	—
3047.035	Mn	60	60	—	3044.223	Cr	—	12	—	3041.664	Pd II	—	35 h	MI
3047.00	In	—	6 h	Cx	3044.21	Rb I	7	—	Bv	3041.648	Dy	7	—	—
3047.00	Te	—	[350]	Bl	3044.16	Ne II	—	[4]	Bn	3041.639	Fe I	80	80	—
3046.954	Th	12	20	—	3044.159	U	12	10	—	3041.610	Ce	8	—	—
3046.933	Sm	25	20	—	3044.120	Zr II	3	1	—	3041.47	Ca	—	3	Ad
3046.930	Fe	4	4	—	3044.085	Re I	25	—	—	3041.420	V	5	40	—
3046.87	Tm	20	—	Me	3044.067	Os	30	8	—	3041.359	Cb	2	3	—
3046.845	U	6	15	—	3044.028	Cu I	20	1 h	—	3041.31	Se II	—	[60]	Bl
3046.805	Mo	50	2	—	3044.006	Yb	2	3	—	3041.278	Al II	—	[50]	Sy
3046.758	Rh I	4	—	—	3044.005	Co	400 R	—	—	3041.252	U	6	5	—
3046.711	Ce	15	—	—	3043.997	U	4	8	—	3041.224	Mn	25	25	—
3046.685	Ti II	10	60	—	3043.925	Ta	18	3	—	3041.217	Pt I	3	—	—
3046.676	Be II	10	[20]	Ps	3043.90	Pb I	—	100	—	3041.079	Pt II	5	20 h	Sh
3046.673	Cb	—	10 w	—	3043.899	Mo	20	—	—	3041.05	Ca I	2	—	Sd
3046.596	Mn	5	—	—	3043.883	Cr	—	50	—	3041.01	Mo	1	25	—
3046.573	U	8	6	—	3043.861	Ti II	3	50	—	3041.004	Re I	20	—	—
3046.520	Be II	—	[15]	Ps	3043.831	Ir	2	—	—	3040.976	Ta	50	7 w	—
3046.5	Pd II	2 h	2 h	—	3043.808	W	12	3	—	3040.96	Fe	8	4	—
3046.493	Yb	2	10	—	3043.790	U	15	8	—	3040.937	Ir I	5	—	Ab
3046.480	Gd	2	—	—	3043.770	Mn	15	—	—	3040.900	Os	200	100	—
3046.463	U	8	6	—	3043.75	Mg I	2	—	Fl	3040.846	Cr I	500 R	200	—

3040.8—3031.9 A.

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities			
		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R	
3040.814	Co I	10	—	—	3038.16	Cb	—	10 wh	—	3034.556	Ir I	20	—
3040.77	Eu	25 w	—	—	3038.047	U	8	2	—	3034.542	Cr	—	30
3040.669	Sb II	—	[400 wh]	Lg	3038.043	Cr	—	10	—	3034.538	Fe I	70	40
3040.603	Mn	50	25	—	3037.99	Yb	1	4	—	3034.536	Re I	30	—
3040.57	Eu	10	—	—	3037.98	Cl II	—	[35]	Ks	3034.535	Ca I	2	—
3040.54	Cb	—	5 h	—	3037.964	Ru I	50	5	—	3034.492	Sm	5	2
3040.49	Yb	1	3	Me	3037.960	Re	30	—	—	3034.48	Ne II	—	[18] Bn
3040.467	Ir I	35	2	—	3037.948	Sm	6	3	—	3034.433	Co I	80	2
3040.46	Te	—	[5]	Bl	3037.935	Ni I	800 R	100	—	3034.375	U	3	1
3040.428	Fe I	400	400	I	3037.914	U	—	20	—	3034.20	Pr	—	3
3040.380	Sm	5 d	1	—	3037.888	I	—	[3]	Ke	3034.195	W	10	9
3040.34	Tb	8	—	Ed	3037.782	Fe I	4	2	—	3034.190	Cr I	200 r	60
3040.310	Ru I	60	10	—	3037.748	Ir	40	2	—	3034.174	Sm	5	—
3040.28	Dy	4	—	—	3037.733	Ru	30	3	—	3034.16	Kr II	—	[2 h] Me
3040.252	Ce	4	—	—	3037.731	Ce	25	3	—	3034.122	In	8	1
3040.049	Th	12	10	—	3037.73	Ne II	—	[12]	Bn	3034.121	Sn I	200 wh	150 wh
3040.04	Re	20 w	—	—	3037.7	Rn	—	[40]	Pe	3034.12	Fe	2	—
3040.04	Lu	—	20 hl	Me	3037.686	Sm	7	3	—	3034.112	Ag	4	1 h
3039.961	Ru I	30	2	—	3037.535	U	3	2	—	3034.069	Th	15	15
3039.926	U	5	10	—	3037.505	Ta	8 h	100	—	3034.060	Ru I	60	5
3039.92	Sc II	4	20 hl	—	3037.388	Fe I	700 R	400 r	S	3034.059	Gd	100	60
3039.89	Eu	15	5	—	3037.372	V I	3	—	Me	3034.049	U	6	5
3039.824	Mo	20	2	—	3037.35	Xe II	—	[4]	Hu	3034.039	Ir I	4	—
3039.815	Cb	5	300	—	3037.280	U	8	6	—	3033.894	Ru	—	6
3039.780	Cr I	80	35	—	3037.274	Ce	6	—	—	3033.86	Yb	1	3
3039.768	Ir	2	—	—	3037.11	In	—	12	Cx	3033.822	V II	20	90 r
3039.763	V	—	5	—	3037.071	Na II	8	[40]	Fr	3033.77	U	4 d	4 d
3039.714	Ir	2	—	—	3037.049	Ce II	8	—	—	3033.71	Xe II	—	[8] Hu
3039.71	Bi	—	2 h	Om	3037.044	Cr I	200 r	100	—	3033.622	Ir I	25	1
3039.70	Eu	10	—	—	3037.04	Tb	8	3	Ed	3033.575	W	12	15
3039.684	Ru I	12	—	—	3036.986	Fe II	—	2	Do	3033.563	Mn	1	2
3039.682	Cb	3	10 h	—	3036.82	Yb	1	3	—	3033.52	A II	—	[8] Rt
3039.68	Rb	—	[15]	Ok	3036.815	U	4	—	—	3033.5	Bi II	—	[15] Ml
3039.66	Yb	3	15	—	3036.8	Rn	—	[60]	Wo	3033.457	Zr	2	—
3039.65	Ne II	—	[7]	Bn	3036.80	Xe II	—	[15 h]	Hu	3033.451	Ru I	70	10
3039.575	W II	2	20	—	3036.784	Ti II	2	15	—	3033.448	V	20	40
3039.572	Cd	4	—	—	3036.709	Dy	20	4	—	3033.445	Fe II	4	2
3039.572	Ce	8	—	—	3036.660	W II	8	20	—	3033.444	U	1	12
3039.567	Co I	70	—	—	3036.606	U	8	6	—	3033.44	Ra II	—	[150] Rs
3039.551	Mn II	1	6 h	Cz	3036.59	Yt II	10	40	—	3033.393	Cb	2	2
3039.512	Ce	8	—	—	3036.550	Re	20	—	—	3033.393	Sm	1	2 h
3039.501	U	10	3	—	3036.503	Zr II	10	8	—	3033.392	Ta	2	—
3039.50	Se	—	[20]	Bl	3036.466	Ru	50	150	—	3033.35	Te	—	[5] Bl
3039.406	Cb	3	5	—	3036.451	U	10	8	—	3033.33	Mo	1	30
3039.358	Sm	6	2	—	3036.450	Pt I	200	10	—	3033.31	Pr	—	4 h
3039.356	In I	1000 R	500 R	Ps	3036.393	Zr II	20	20	—	3033.275	I	—	[5] Ke
3039.316	Fe	20	15	—	3036.33	I	—	[5]	Bl	3033.234	Mo	8	10
3039.311	W	10	12	—	3036.314	Mo	30	2	—	3033.2	Rn	—	[10] Pe
3039.31	Cs	—	[4]	Bs	3036.287	Ta	8	2	—	3033.193	U	12	12
3039.263	U	15	12	—	3036.222	Er	20	4	—	3033.18	Dy	8	1
3039.260	Ir I	25	2	—	3036.104	Cu I	200	50	—	3033.18	Au	25	30 h
3039.253	Ce	4	—	—	3036.08	V	—	35 h	—	3033.124	Ce	8	—
3039.21	Ca I	1 h	4	Sd	3035.99	Tm	15	30	Me	3033.11	Xe	—	[3] Hu
3039.187	Cb	2	3	—	3035.98	Ne II	—	[7]	Bn	3033.101	Fe	40	20
3039.136	U	5	5	—	3035.965	U	15	8	—	3033.050	Ce	10	—
3039.128	Sm	15	9	Kn	3035.863	Ce	12	—	—	3032.979	U	4	2
3039.12	Bi	—	2	Om	3035.808	Ca	—	3	—	3032.927	Cr II	10	100
3039.064	Ge I	1000	1000	—	3035.802	Ta	2	—	—	3032.865	Sm	15	—
3039.058	Mo	—	25	—	3035.781	Zn I	200	100	IHz	3032.850	Gd	100	100
3038.993	Ce	4	—	—	3035.771	Ru	4	20	—	3032.84	As I	125	70
3038.962	Nd	4	2	—	3035.761	Cd	—	2	—	3032.83	Tb	8	8
3038.790	Mo	—	3	—	3035.74	Fe	100	60	—	3032.806	Os	50	15
3038.784	Ru	3	6	—	3035.542	Th	10	5	—	3032.789	Re	20	—
3038.779	Fe II	3	3	—	3035.534	Ir	3	—	—	3032.775	Sn	50	20
3038.706	Ti II	2	40	—	3035.51	U	10 d	8 d	—	3032.77	Kr	—	[5 wh] Me
3038.706	V	20	1	—	3035.473	Ru I	60	4	—	3032.768	Cb	3	300
3038.69	Ho	4	6	Ex	3035.38	Eu	10 w	—	—	3032.765	U	2	2
3038.67	In	—	3	Cx	3035.365	Mn	5	8	—	3032.727	Ce II	10	—
3038.66	Se II	—	[60]	Bl	3035.333	Mo	30	2	—	3032.672	Ru	3	—
3038.66	Tb	8	3	Ed	3035.18	Bi I	60 h	—	To	3032.545	Mo	5	—
3038.602	Mn	3	—	—	3035.113	Th	15	15	—	3032.5	Rn	—	[40] Pe
3038.600	Th	12	12	—	3035.10	Hg	—	[30]	Ps	3032.47	O II	—	[3 h] Mh
3038.596	Zr	—	2	—	3035.025	Cb	2	30	—	3032.445	U	1	4 h
3038.54	Yb	—	2	—	3035.008	Ce	6	—	—	3032.41	Cs	—	[4] Bs
3038.521	V	—	45	—	3034.99	Rh	2	4	—	3032.410	Ir I	50	1
3038.503	Mn	4	4	—	3034.95	Cb	1	100 w	Me	3032.334	Ce	8	—
3038.493	U	3	6	—	3034.925	Mo	5	25	—	3032.28	B II	—	10
3038.472	Yt I	3	—	—	3034.91	Tb	8	3	Ed	3032.20	Pd II	2	100 h
3038.39	I	—	[18]	Bl	3034.895	U	3	1	—	3032.192	V	—	8
3038.38	Kr	—	[3 wh]	Me	3034.873	Bi	30	30	—	3032.09	O II	—	[7 h] Mh
3038.367	I	—	[25]	Ke	3034.843	Sm	20	10	—	3032.08	Rb I	4	—
3038.366	Co I	25	—	—	3034.82	K I	30 h	—	Fl	3032.057	I	—	[3] Ke
3038.291	Dy	20	10	—	3034.661	U	3	2	—	3032.006	Zr II	2	2 h
3038.2	P	—	[15]	Gu	3034.632	Yb	2	6	—	3031.991	U	15	15
3038.176	Ru I	80	5	—	3034.62	Te	—	[10]	Bl	3031.914	Ru	30	—

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3031.878	Ir	2 h	-	-	3029.131	U	20	15	-	3026.163	Dy	30	4	-
3031.870	Ni I	200	-	-	3029.068	Na II	-	[60]	Fr	3026.15	U	8 d	3 d	-
3031.701	Th	10	3	-	3029.041	Mn II	2	6 h	Cz	3026.07	Tm	60	30	Me
3031.68	Tm	7	15	Me	3029.01	Tl II	-	[15]	El	3025.92	Er	5	2	-
3031.65	Pb	-	20	Sx	3028.979	Gd	3	3	-	3025.88	La II	-	3	Me
3031.639	Fe I	200	200	-	3028.97	Ca I	2	2	Sd	3025.842	Fe I	400 r	300 r	-
3031.621	Ce	12	10	-	3028.958	Ce	12	-	-	3025.822	Ir I	50	3	-
3031.60	Tb	8	15	Ed	3028.93	A II	-	[15]	Rt	3025.638	Fe	100	100	-
3031.59	Kr	-	[5 whs]	Me	3028.917	Os	40	12	-	3025.617	Hg I	15	10	-
3031.573	U	1	6	-	3028.881	Ir I	4	-	-	3025.61	Dy	8	-	-
3031.504	Sm	5	2	-	3028.878	U	2	1	-	3025.51	Pb	-	2	Sx
3031.5	Cs	-	[4]	Bs	3028.87	Rh	2 h	-	-	3025.435	Th	20 d	5	-
3031.497	Ce	2	-	-	3028.86	Br	-	[3]	Bl	3025.397	Rh I	6	-	-
3031.486	Cr	15	8	-	3028.84	Ne II	-	[12]	Bn	3025.372	Ce	1	10	-
3031.353	Cr I	40	30	-	3028.782	Ta	50	7	-	3025.298	Cb	2	-	-
3031.308	Er	8	3	-	3028.762	Pd	3 h	-	-	3025.29	Hf II	30	30	-
3031.295	Os	40	10	-	3028.753	Ce	4	-	-	3025.282	Fe	50	30	-
3031.291	Th	8	6	-	3028.75	Cb	-	4	-	3025.259	W	10	8	-
3031.279	Re	10	-	-	3028.74	W II	-	10	-	3025.23	Pr	-	8	-
3031.216	Pt II	10	40 h	-	3028.73	Tm	5	30	Me	3025.164	Ta	70	15	-
3031.215	Fe	150	150	-	3028.684	Cb	2	5 h	-	3025.153	Zr II	3	2 h	-
3031.213	Mo	20	-	-	3028.67	Eu	3	-	-	3025.126	Ce II	8	-	-
3031.18	Dy	4	1 h	-	3028.665	Ca	1	2	-	3025.099	Ru	8	-	-
3031.17	Eu	-	10 h	-	3028.664	Ce	4	-	-	3025.060	Tl I	3	-	-
3031.16	Hf II	70	90	-	3028.605	U	4	1	-	3025.060	Re I	10	-	-
3031.11	Yb	100 h	30	-	3028.580	Th	12	12	-	3025.034	U	12 h	20 h	-
3031.063	Mn	8	25	-	3028.565	In II	-	[2]	Ps	3025.004	Mo	50	4	-
3031.007	V I	15	10	-	3028.478	Sm	4	3	-	3024.994	Cu I	30	3	-
3031.006	Os	30	10	-	3028.464	Ir	3	-	Ab	3024.980	V II	2	60	Me
3030.93	V I	3	-	-	3028.45	Te	-	[15]	Bl	3024.95	Ca I	2	-	-
3030.918	Zr II	15	10	-	3028.443	Cb	50	200	-	3024.920	W	15	12	-
3030.868	Th	10	5	-	3028.426	Rh I	80	-	-	3024.89	Rb	-	[2]	Ok
3030.858	Ce	3	-	-	3028.38	Yb	-	2	-	3024.782	Ir I	4	-	-
3030.85	Ne II	-	[4]	Bn	3028.378	U	4	4	-	3024.76	Hf II	18	25	-
3030.828	U	12	12	-	3028.278	Er	20	2	-	3024.745	Zr II	2 h	2 h	-
3030.781	Ru I	30	2	-	3029.25	Cs	-	[4]	Bs	3024.738	Cb	10 w	200	-
3030.769	Sc I	20	8	-	3028.187	U	10	10	-	3024.70	Sb	2 h	4 h	-
3030.695	Os I	500	40	-	3028.171	Ce	5	-	-	3024.70	Ca	-	4	Ad
3030.67	Cd II	-	6	-	3028.125	Cr	2	125	-	3024.681	Cr	10	8	-
3030.622	U	3	3 h	-	3028.043	V II	2	50	-	3024.669	Th	10	6	-
3030.619	Ce	5	-	-	3028.040	Zr II	20	30	-	3024.635	Bi I	250 wh	50	-
3030.61	Fe	5	3	-	3027.992	Sm	4	-	-	3024.603	Hf	15	-	-
3030.507	I	-	[20]	Ke	3027.932	U	3	6	-	3024.571	Ce	12	-	-
3030.490	Th	10	1	-	3027.910	Pd I	150	200 h	-	3024.510	U	18	15	-
3030.471	Ce	5	-	-	3027.888	Cb	2	-	-	3024.496	W II	9	20 l	-
3030.450	Re I	100	-	-	3027.790	Ru	12	50	-	3024.385	U	25 r	20 r	-
3030.43	K II	-	[5]	Bn	3027.789	W	8	6	-	3024.350	Cr I	300 r	125	-
3030.41	Dy	8 s	4	-	3027.771	Mo	20	30	-	3024.33	Ga	-	2 w	Kl
3030.35	Cs	-	[4]	Bs	3027.75	Yt II	6	7	Me	3024.299	Pt I	5	-	-
3030.328	Ir	2 h	-	-	3027.7	Rn	-	[5]	Wo	3024.296	Ir I	30	-	-
3030.325	Mo	2	20	-	3027.689	U	15	8	-	3024.29	Pd	-	4 h	-
3030.313	Ne I	-	[50]	Ps	3027.63	Xe II	-	[2 h]	Hu	3024.273	Ta	3	1	-
3030.309	Ce	25	-	-	3027.626	Ce	10	-	-	3024.247	Cb	2	-	-
3030.291	Ta	18	3	-	3027.612	Gd	100	60	-	3024.074	Al II	-	[2]	Sy
3030.258	Cu I	10	1 h	-	3027.601	V	-	25	-	3024.033	Fe I	300	200	I
3030.245	Cr I	200 r	150	-	3027.57	Dy	10	4	-	3023.966	Ce	4	-	-
3030.238	Ir I	8	-	-	3027.510	Ta	125	35 w	-	3023.94	Sn II	-	2 h	Mc
3030.214	Ca	1	2	-	3027.496	Hg I	25	15	-	3023.911	Rh I	100	2	-
3030.214	Yt II	2 h	10	-	3027.476	Sm	6	3	-	3023.883	V	-	30	-
3030.149	Fe	300	300	I	3027.33	Tb	8	3	Ed	3023.880	Ce	5	-	-
3030.01	Kr II	-	[4]	Me	3027.29	Lu	-	8	Me	3023.86	Tl II	-	100 wh	-
3029.90	Te	-	[5]	Bl	3027.27	Xe II	-	[3]	Hu	3023.85	U	4	1	-
3029.86	Cb	-	5 wh	-	3027.247	U	2	1	-	3023.80	N II	-	[5]	Fl
3029.826	Dy	30	4	-	3027.2	P	-	[15 h]	Gu	3023.70	Tb	3	3	Ed
3029.82	Eu	4	10	-	3027.084	Ru	20	-	-	3023.690	Mo	20	-	-
3029.807	Sb	100	200 wh	-	3027.04	Ne II	-	[12]	Bn	3023.66	Rb	-	[20]	Ok
3029.745	Cb	2	10	-	3026.94	Rh I	2	-	-	3023.657	U	6	4	-
3029.730	Ti II	12	150	-	3026.913	Ne	-	[15]	Ps	3023.61	Yb	-	2	-
3029.694	Mn	12	-	-	3026.782	W	9	7	-	3023.584	Re	2	-	-
3029.580	V II	-	40	-	3026.762	Al II	-	[3]	Sy	3023.512	Yt II	7	3	-
3029.554	Yb	1	40 h	-	3026.75	A II	-	[5]	Rt	3023.485	Ce	10	-	-
3029.534	Ta	5	2	-	3026.75	Eu	-	15	-	3023.476	Hg I	60	10 h	-
3029.515	Zr I	60	5	-	3026.705	U	8	10 h	-	3023.433	Ce	5	-	-
3029.419	U	10	6	-	3026.675	W	9 s	8	-	3023.39	In	-	3	Sq
3029.41	Eu	2	-	-	3026.668	Yb	4	-	-	3023.34	Eu	-	10 h	-
3029.393	Pr	-	10	-	3026.647	Cr	8	125	-	3023.303	U	2	-	-
3029.362	Ir I	60	3	-	3026.620	Ce	18 w	-	-	3023.300	Mo	5	100	-
3029.297	Ni I	3	-	-	3026.580	Sm	3	-	-	3023.29	Te	-	[100]	Bl
3029.234	Yb	2	-	-	3026.580	Th	15	15	-	3023.161	U	3 h	3 h	-
3029.233	Fe I	80	60	-	3026.47	Yt II	7	20	-	3023.14	Ho	-	4	Ex
3029.23	Tb	3	3	Ed	3026.461	Fe I	200	200	-	3023.076	Sm	2	1	-
3029.230	W	8	1	-	3026.371	Co I	100	40	-	3022.994	Mo	25	1	-
3029.205	Au I	25	30	-	3026.363	Ir	-	3	-	3022.994	Re	25	-	-
3029.164	Cr I	70	50	-	3026.26	Re	2	-	-	3022.947	Ru	-	12	-
3029.15	Cs	-	[4]	Bs	3026.183	Zr II	1	3 h	-	3022.93	Cl II	-	[30]	Ks

3022.8—3014.1 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3022.871	U	4	2	-	-	3019.764	Ru	8	12	-	-	3016.96	Dy	8	3	-	-
3022.847	Pt	5	2	-	-	3019.666	Ta	15	3	-	-	3016.956	U	15	12	-	-
3022.820	Ti II	-	150	Wh	-	3019.616	Pd II	-	30	h	-	3016.94	Hf II	15	6	-	Me
3022.791	Ce	12	-	-	-	3019.60	Be I	5	-	-	Ps	3016.838	Er	10	2	-	-
3022.76	V I	10	h	-	-	3019.567	Cb	-	5	-	-	3016.784	V II	15	80	-	-
3022.753	U	3	2	-	-	3019.544	Rh I	5	-	-	-	3016.78	Hf	25	10	-	-
3022.749	Mn	50	25	-	-	3019.511	Be I	15	-	-	-	3016.777	Mo	25	2	-	-
3022.740	Mo	1	6	-	-	3019.507	Zr	2	-	-	-	3016.697	Ru I	4	-	-	-
3022.739	Cb	5	w	100	-	3019.419	Ce	3	-	-	-	3016.556	Ce	2	-	-	-
3022.688	Ir I	20	1	-	-	3019.378	Th	12	10	-	-	3016.491	Re	100	-	-	-
3022.66	W II	2	12	-	-	3019.375	Os	100	20	-	-	3016.470	W	12	10	-	-
3022.643	Zr I	3	2	h	-	3019.371	Ru I	20	-	-	-	3016.454	Mn	25	25	-	-
3022.613	Cu I	30	3	-	-	3019.37	Ca I	1	3	-	Sd	3016.45	Br	-	-	[4]	Bl
3022.60	Rb I	-	[10]	-	Bv	3019.350	Sc I	20	10	-	-	3016.426	Ir I	35	-	2	h
3022.566	V	2	50	-	-	3019.34	Be I	30	-	-	Ps	3016.4	Pb II	-	25	-	Ea
3022.49	Kr II	-	[5 h]	-	Me	3019.303	Sm II	10	3	-	-	3016.384	U	1	4	h	-
3022.47	Cb	-	5	-	-	3019.291	U	8	15	-	-	3016.374	Ta	7	7	-	-
3022.469	Ce	5	-	-	-	3019.290	Fe	2	-	-	-	3016.37	Lu	-	15	hl	Me
3022.466	U	3	3	-	-	3019.229	Ir	35	2	h	-	3016.185	Fe I	200	150	-	-
3022.46	Yb	1	4	-	-	3019.2	Rn	-	[18]	-	Wo	3016.18	Tb	15	15	-	Ed
3022.410	Ir	30	1	-	-	3019.196	Cb	-	2	-	-	3016.16	V I	25	8	-	-
3022.372	In II	-	[18]	-	Ps	3019.17	Tb	3	8	-	Ed	3016.052	U	6	4	-	-
3022.362	Co I	60	2	-	-	3019.143	Ni I	200	R	30	-	3016.02	Re I	80	W	-	-
3022.353	Ce	2	-	-	-	3019.095	Ta	3	1	-	-	3015.983	V	-	25	-	-
3022.286	Ta	3	1	-	-	3019.07	Cb	1	3	-	-	3015.9129	Fe	70	50	-	IMe
3022.281	Yt	7	2	-	-	3019.06	Yb	-	2	-	-	3015.87	Br	-	-	[3]	Bl
3022.26	La II	2	3	-	Me	3018.982	Fe I	150	150	-	-	3015.825	Au II	-	12	-	-
3022.207	U	12	12	-	-	3018.95	Yt I	3	-	-	-	3015.823	Cb	-	20	-	-
3022.189	Sb II	-	60	-	Sp	3018.95	Pd II	-	2	h	-	3015.8	Rn	-	-	[10]	Pe
3022.154	Eu	25	10	-	-	3018.95	La	4	3	-	Me	3015.8	Cs	-	-	[4]	Bs
3022.145	V	-	10	-	-	3018.855	Cb	1	h	10	-	3015.721	Th	15	10	-	-
3022.114	Hf II	8	2	-	-	3018.838	U	3	6	-	-	3015.694	Dy	10	3	-	-
3022.10	Xe	-	[3 wh]	-	Hu	3018.821	Cr I	200	r	60	-	3015.687	Sm	3	3	-	-
3022.097	Th	12	12	-	-	3018.82	Cl II	-	-	[12]	-	3015.684	Co I	60	2	-	-
3021.998	W II	15	20	-	-	3018.771	Ce	3	-	-	-	3015.682	U	5	4	-	-
3021.95	Tb	3	3	-	Ed	3018.61	Tm	10	40	-	Me	3015.653	Os	100	15	-	-
3021.890	Re	30	-	-	-	3018.587	U	8	8	-	-	3015.642	I	-	-	[15]	Ke
3021.881	Cb	-	15	W	-	3018.55	Mo	1	100	-	-	3015.60	Ga	-	2	-	Kl
3021.79	Dy	5	-	-	-	3018.53	Zr II	-	3	wh	-	3015.59	S II	-	-	[5]	Bl
3021.78	V I	8	4	-	-	3018.498	Pd II	-	50	h	-	3015.541	Ti	4	h	-	-
3021.749	Pd I	2	-	-	-	3018.496	Cr I	200	r	125	-	3015.52	Ti II	-	-	[2]	El
3021.724	Yt I	10	-	-	-	3018.470	Sm	2	1	-	-	3015.52	Xe II	-	-	[10 h]	Hu
3021.68	Pr	-	10	-	-	3018.352	Zn I	125	40	-	IHz	3015.510	Cr	1	150	-	-
3021.617	Mo	-	40	-	-	3018.333	Nd	8	4	-	-	3015.418	Mo	5	10	-	-
3021.608	W	9	7	-	-	3018.314	Hf	60	10	-	-	3015.414	Ce	8	-	-	-
3021.558	Cr I	300	r	200	r	3018.31	Cb	1	5	h	-	3015.406	Ru	8	50	-	-
3021.557	Cu I	25	5	-	-	3018.17	I	-	-	[10]	-	3015.400	Na II	-	-	[60]	Fr
3021.499	Hg I	80	40	-	Cn	3018.13	Fe	4	4	-	-	3015.364	Sc I	20	9	-	-
3021.225	Sm	6	-	-	Kn	3018.103	U	5	5	-	-	3015.29	Tm	125	100	-	Me
3021.22	U	10	15	-	-	3018.081	Zr II	-	2	wh	-	3015.237	Cb	3	1	-	-
3021.219	I	-	[18]	-	Ke	3018.039	Os I	300	R	50	-	3015.194	Cr I	200	r	80	-
3021.073	Fe I	700	R	300	r	3018.032	Ir I	15	-	-	-	3015.17	Pr	-	10	-	-
3021.038	Ce	15	-	-	-	3017.893	Pt	60	10	-	-	3015.09	Te	-	-	[20]	Bl
3020.92	U	8	d	12	d	3017.810	Ru	10	60	-	-	3015.074	Dy	20	5	-	-
3020.9	Cs	-	-	[4]	-	3017.78	In	-	3	-	Sq	3015.06	Pd II	-	2	-	-
3020.883	Ce	15	-	-	-	3017.769	Ce	6	-	-	-	3015.00	Cb	-	15	-	-
3020.882	Ru I	60	40	-	-	3017.740	Er	10	1	-	-	3014.925	Th	12	8	-	-
3020.70	Yb	-	5	-	Me	3017.73	Dy	2	-	-	-	3014.915	Cr I	300	r	100	-
3020.693	Mo	5	10	-	-	3017.726	Ir	2	h	-	-	3014.884	U	6	2	-	-
3020.673	Cr I	200	r	100	-	3017.65	Kr II	-	-	[20 whs]	-	3014.823	V II	10	100	-	-
3020.666	Cb	5	8	-	-	3017.632	Fe I	150	150	-	-	3014.780	Mo	15	-	-	-
3020.65	Dy	10	-	-	-	3017.569	Cr I	300	r	200	-	3014.760	Cr I	300	r	100	-
3020.640	Fe I	1000	R	600	r	3017.56	Yb	3	40	-	-	3014.743	Pd II	-	-	2	h
3020.639	Co	60	-	-	-	3017.546	Co I	180	r	5	-	3014.735	Nd	4	-	2	h
3020.58	Tb	3	-	-	Ed	3017.51	Te	-	-	[350]	-	3014.727	Ir	8	-	-	-
3020.571	U	6	6	-	-	3017.47	Eu	15	d	-	-	3014.691	Mo	20	3	-	-
3020.54	Lu	-	100	-	Me	3017.46	Pb	-	10	-	-	3014.668	Mn	15	15	-	-
3020.529	Hf	15	2	-	-	3017.443	W	12	10	-	-	3014.65	Tm	40	10	-	Me
3020.496	Os	-	3	-	-	3017.43	Xe	-	-	[50 h]	-	3014.61	Ho	-	4	-	Ex
3020.489	Fe I	300	r	300	r	3017.43	Fe	3	3	-	-	3014.571	U	2	-	-	-
3020.467	Zr II	50	30	-	-	3017.351	U	6	4	-	-	3014.554	Ce	3	-	-	-
3020.3	Cs	-	-	[4]	-	3017.348	Ne I, II	-	-	[50]	-	3014.503	Pr	10	8	-	-
3020.29	Tb	8	15	-	Ed	3017.32	Cd	-	-	[12]	-	3014.5	Rn	-	-	[18]	Pe
3020.242	U	8	6	-	-	3017.313	Ir	35	2	h	-	3014.49	A II	-	-	[10]	Rt
3020.214	W	7	6	-	-	3017.262	Co I	60	-	-	-	3014.470	Ce	3	-	-	-
3020.15	Ca I	2	2	h	-	3017.247	Os	100	25	-	-	3014.466	Ir I	10	-	-	-
3020.02	Te	-	-	[15]	-	3017.246	Pt	2	8	-	-	3014.45	Yb	2	15	-	-
3020.009	Ir	35	1	-	-	3017.236	Ru	100	50	-	-	3014.445	Cb	3	10	-	-
3019.94	I	-	-	[10]	-	3017.195	Ce	20	5	-	-	3014.438	Zr I	15	-	-	-
3019.841	Zr II	10	6	-	-	3017.187	Ti II	15	200	-	-	3014.37	V I	15	h	-	-
3019.81	U	5	10	-	-	3017.15	W	3	d	10	-	3014.366	Sm	5	10	-	-
3019.80	Tm	5	15	-	Me	3017.122	Th	12	10	-	-	3014.261	Ce	8	-	-	-
3019.790	Cb	1	-	2	h	3017.10	Tm	20	40	-	Me	3014.23	Rh I	2	-	-	-
3019.78	Xe II	-	-	[2]	-	3017.096	Ce	10	-	-	-	3014.23	Au	5	15	-	-
3019.769	Er	12	1	-	-	3016.976	Re	20	-	-	-	3014.175	Fe I	70	35	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
3014.165	Nd	8	2	-	-	3011.05	Hg I	3 h	-	-	Cn	3007.655	Mn	40	40	-	-
3014.159	Mo	5	50	-	-	3011.017	Ce	3	-	-	-	3007.618	Ir I	6	2 h	-	-
3014.105	Ce	5	-	-	-	3010.964	Sm	2	-	-	-	3007.533	Ta	2	-	-	-
3014.050	Sm	2	1	-	-	3010.956	Ce	2	-	-	-	3007.487	Ti	2 h	-	-	-
3013.831	U	2	1 h	-	-	3010.844	Ta	5	70	-	-	3007.442	Na II	-	[20]	-	Fr
3013.787	W	12	12	-	-	3010.839	Cu I	250	30	-	-	3007.405	W	7	3	-	-
3013.763	Mo	100 h	5	-	-	3010.8	Rn	-	[100]	-	Wo	3007.32	La II	4	4	-	Me
3013.713	Cr I	200 r	150	-	-	3010.78	La I	5	-	-	Me	3007.283	V II	2	50	-	-
3013.63	Te	-	[5]	-	Bl	3010.769	Sm	3 d	2	-	-	3007.282	Ir I	25	-	-	-
3013.61	Tb	3	3	-	Ed	3010.76	W II	8 d	20	-	-	3007.281	Fe I	80	60	-	-
3013.596	Co I	60 r	4	-	-	3010.754	U	10	3	-	-	3007.28	O	-	[2]	-	Fi
3013.508	Sm	3	2 h	-	-	3010.724	Ce	2	-	-	-	3007.200	Re	5	-	-	-
3013.44	U	5 d	1 d	-	-	3010.686	Cb	1	15	-	-	3007.145	Fe I	100	80	-	-
3013.41	O II	-	[12 h]	-	Mh	3010.68	Pr	3	20	-	-	3007.11	Tb	8	3	-	Ed
3013.393	Sm	4	-	-	-	3010.642	Cr	-	40	-	-	3007.08	O II	-	[10]	-	Fi
3013.388	Mo	25	5	-	-	3010.622	Yb	2	10	-	-	3007.047	Re	15	-	-	-
3013.370	U	6	2	-	-	3010.55	Tb	8	8	-	Ed	3007.032	Ce	2	-	-	-
3013.359	Ru I	60	5	-	-	3010.549	Ce	5	-	-	-	3007.013	U	2	-	-	-
3013.321	Zr II	10	5	-	-	3010.515	Ru	10	45	-	-	3007.01	I	-	[10]	-	Bl
3013.28	B	-	3	-	Sy	3010.462	Ce	6	-	-	-	3006.98	Cl II	-	[20]	-	Ks
3013.199	W	10	10 s	-	-	3010.421	W	9	6	-	-	3006.930	Th	12	15	-	-
3013.18	I	-	[10]	-	Bl	3010.375	Cb	1	15	-	-	3006.92	V I	5 h	-	-	-
3013.170	Ce	8	-	-	-	3010.37	U	8 d	2 d	-	-	3006.90	O II	-	[12 h]	-	Mh
3013.151	Re I	30	-	-	-	3010.327	Sm	4	-	-	Kn	3006.88	Yb	1	3	-	-
3013.135	U	2	-	-	-	3010.29	Er	6	-	-	-	3006.86	N II	-	[50]	-	Fi
3013.124	Sm	2 h	2 h	-	-	3010.284	Zr II	12	25	-	-	3006.858	Ca I	25	5	-	FWg
3013.104	V	10	70	-	-	3010.19	Pb	-	2	-	Sx	3006.8	Rn	-	[300]	-	Pe
3013.074	Os	150	20	-	-	3010.141	Ti I	2	-	-	-	3006.657	W	6	5	-	-
3013.030	Cr I	80	40	-	-	3010.139	Gd	100	100	-	-	3006.614	Ce	4	-	-	-
3012.975	U	3	2 h	-	-	3010.011	Sm	10	-	-	-	3006.590	Ru	70	15	-	-
3012.955	Ne I	-	[50]	-	Pa	3009.96	Te	-	[5]	-	Bl	3006.57	Hg II	-	[50]	-	Ps
3012.927	Ag	-	10	-	-	3009.901	Ir I	25	10	-	-	3006.559	Ta	3 w	3 h	-	-
3012.916	Ru I	60	4	-	-	3009.896	Os	20	8	-	-	3006.501	V	-	50	-	-
3012.902	Hf II	80	100	-	-	3009.875	Zr II	2	2 h	-	-	3006.429	Re I	40	-	-	-
3012.858	Ir	5	-	-	-	3009.777	Pd I	50 r	10	-	-	3006.36	Tm	10	-	-	Me
3012.853	Mn	8	-	-	-	3009.770	Ce	5	-	-	-	3006.35	V I	5	-	-	-
3012.708	U	3	1	-	-	3009.725	Th	15	10	-	-	3006.35	Te	-	[50]	-	Bl
3012.708	Th	12	10	-	-	3009.694	Ru I	20	-	-	-	3006.314	W	9	12	-	-
3012.574	Ir I	20	-	-	-	3009.572	Ir	2	-	-	-	3006.273	Eu	30	-	-	-
3012.549	Cb	2	5	-	-	3009.570	Fe I	500	400	-	I	3006.24	V I	5 h	-	-	-
3012.537	Ta	125	100 l	-	-	3009.57	Rh	2	2	-	-	3006.150	Sm	6	3	-	-
3012.523	Pt	1	3	-	-	3009.53	Eu	10 W	-	-	Kn	3006.05	Cl II	-	[20]	-	Ks
3012.505	Sm	2	1	-	-	3009.48	Ho	-	4 h	-	Ex	3006.01	O II	-	[5 h]	-	Mh
3012.484	Ce	5	-	-	-	3009.42	U	15 d	2 d	-	-	3005.973	Ru	12	-	-	-
3012.468	Er	10	2	-	-	3009.39	Yb	2	20	-	-	3005.966	Re I	10 W	-	-	-
3012.450	Fe	50	30	-	-	3009.30	Tb	8	8	-	Ed	3005.88	Rb	-	[2]	-	Ok
3012.447	U	10	1	-	-	3009.205	Ca I	20	5	-	IWg	3005.823	Rh	6	-	-	-
3012.380	Eu	20 w	1	-	-	3009.147	Sn I	300 h	200 h	-	-	3005.812	V	-	50	-	-
3012.380	Pt I	2	-	-	-	3009.138	Na II	3	[20]	-	Fr	3005.783	Pt	3	-	-	-
3012.30	Dy	3	-	-	-	3009.092	Fe	80	60	-	-	3005.767	Cb	1	50	-	-
3012.20	Hf II	-	3	-	-	3009.076	W	10	5	-	-	3005.765	Yb	10	100	-	-
3012.196	Gd	4	2	-	-	3008.98	Rh	2	3	-	-	3005.764	Co I	100	-	-	-
3012.183	Sm	20	10	-	Kn	3008.98	W	-	12	-	Ex	3005.72	Rn	-	[3]	-	Rc
3012.18	Sn II	-	[2 h]	-	Mc	3008.964	Cb	-	10	-	-	3005.62	O II	-	[5]	-	Fi
3012.138	U	2	-	-	-	3008.922	U	5	1	-	-	3005.557	Hf	50	8	-	-
3012.129	Ne I	-	[50]	-	Ps	3008.92	Tm	20	20	-	Me	3005.52	U	2	-	-	-
3012.086	Sm	5	3	-	-	3008.83	O II	-	[10 h]	-	Mh	3005.52	Tb	8	3	-	Ed
3012.05	Te	-	[25]	-	Bl	3008.821	Dy	5	-	-	-	3005.497	Zr I	25	2	-	-
3012.041	Cs II	-	[8]	-	Ot	3008.820	Sm II	3	2	-	-	3005.41	Cd I	25	4	-	Fi
3012.015	V	2	50	-	-	3008.796	Ru	50	5	-	-	3005.370	Zr I	10	-	-	-
3012.005	Cu I	50	6	-	-	3008.789	Ce	40	3	-	-	3005.357	Ti I	3	-	-	-
3012.004	Ni I	800 R	125 W	-	-	3008.757	W	8	7	-	-	3005.306	Fe	70	40	-	-
3011.945	Re	20 w	-	-	-	3008.625	Ir I	4	-	-	-	3005.262	Yt I	8	-	-	-
3011.94	Fe	3	2	-	-	3008.614	V	3	70	-	-	3005.213	Ce	2	-	-	-
3011.902	U	2	1	-	-	3008.505	V	-	50	-	Me	3005.212	Ir I	35	20	-	-
3011.90	Ga II	-	2	-	Sy	3008.491	Th	15	12	-	-	3005.143	Cb	2	2	-	-
3011.881	Ca	15	-	-	-	3008.42	Kr II	-	[8 h]	-	Me	3005.126	Ru	-	60	-	-
3011.877	Ta	100 w	15	-	-	3008.415	Cb	-	50	-	-	3005.101	U	6	4	-	-
3011.862	Sm	3 h	2 h	-	Kn	3008.322	Ti II	1	25	-	-	3005.057	Cr I	300 r	125	-	-
3011.748	Zr I	100	4	-	-	3008.31	In	-	500 W	-	Cx	3005.039	Ir I	3	-	-	-
3011.690	Ir I	35	1	-	-	3008.265	Mn	15	15	-	-	3005.02	Ta	2 h	3 h	-	-
3011.678	W	8	7	-	-	3008.259	Ru	50	3	-	-	3005.006	W	7	6	-	-
3011.61	Cb	-	4 h	-	-	3008.18	U	4 d	2 d	-	-	3004.919	Ta	2	18 l	-	-
3011.547	Pt	3	-	-	-	3008.142	Zr II	10	5	-	-	3004.87	Te	-	[10]	-	Bl
3011.482	Fe	125	125	-	-	3008.139	Fe I	600 r	400 r	-	-	3004.824	V I	12	1	-	-
3011.471	Ce	2	-	-	-	3008.131	Ce	12	-	-	-	3004.80	Eu	18	1 h	-	-
3011.376	Mn	25	25	-	-	3008.02	Cd II	10	5	-	-	3004.71	Ti II	-	[10]	-	El
3011.3	Cd	-	[10]	-	Es	3007.98	Pr	5	15	-	-	3004.630	Fe I	5	3	-	-
3011.24	Hf II	15	20	-	Me	3007.975	Nd	6	2	-	-	3004.626	Cb	-	15	-	-
3011.19	U	3 d	2 d	-	-	3007.909	U	2	1	-	-	3004.600	Ru	50	2	-	-
3011.162	Mn	25	25	-	-	3007.896	Os	40	8	-	-	3004.56	Tb	8	3	-	Ed
3011.16	Er	8	1	-	-	3007.82	Mo	1	5	-	-	3004.553	U	3	-	-	-
3011.117	Ta	100 W	25	-	-	3007.797	Ce	2	-	-	-	3004.47	Hg	-	[30]	-	Ps
3011.09	Cr	15	2	-	-	3007.74	O II	-	[10 h]	-	Mh	3004.460	Mo	5	40	-	-
3011.070	Sb	-	70	-	Sp	3007.713	Mo	15	-	-	-	3004.457	Rh I	4	1	-	-

3004.3—2995.8 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
3004.39	Cl II	-	[10]	Ks	3001.435	Mo	15	-	-	2998.348	Ru	80	8	-
3004.339	Fe	25	-	-	3001.42	Yt II	7	4	Me	2998.287	W	6	2	-
3004.33	V I	8	-	-	3001.35	Eu	4 W	-	-	2998.28	S	-	[25]	Bl
3004.263	Fe II	-	2	-	3001.28	Yb	-	2	-	2998.260	Sm	4	-	-
3004.25	W II	5	9	-	3001.271	Cs II	-	[10]	Ot	2998.226	Cb	2	2	-
3004.217	Ru	30	-	-	3001.264	Th	12	12	-	2998.20	Ca	-	[2]	Bs
3004.15	Ta	7	1	-	3001.256	Ir I	5	-	-	2998.174	Al II	-	[8]	Sy
3004.15	U	10 d	2 d	-	3001.220	U	2	-	-	2998.149	Mo	10	-	-
3004.14	Mo	5	-	-	3001.205	V II	20	200 r	-	2998.14	Eu	4	-	-
3004.138	Re I	40	-	-	3001.169	Pt II	3	50 w	-	2998.121	Cr	12	2	-
3004.125	Sm	3	1	-	3001.132	Re	40	-	-	2998.058	Er	10	1	-
3004.123	Fe	18	10	-	3001.125	Cb	1	15	-	2998.02	Yb	1	9	-
3004.06	Ga	-	15	-	3001.03	Dy	3	-	m	2998.014	Ce	3	-	-
3003.98	Xe II	-	[20]	Hu	3000.951	Fe I	800 R	300 r	-	2997.968	Ir	7	-	-
3003.952	Sm	2	-	-	3000.942	Mo	2	3	-	2997.967	Pt I	1000 R	200 r	-
3003.93	As	-	50	Ro	3000.922	Th	30 d	10	-	2997.947	V	-	35	-
3003.924	Cr	1	150	-	3000.890	Cr I	150 r	125	-	2997.93	Ga	-	[5]	Kl
3003.86	Se	-	[8]	Bl	3000.868	Ti I	20	20	-	2997.789	W	12	10	-
3003.831	Er	9	-	-	3000.863	Ca I	20	6	IWg	2997.74	O II	-	[7 h]	Mh
3003.762	Dy	15	5	-	3000.855	Mo	25	1	-	2997.715	Ce	2	-	-
3003.74	Cb	-	10	-	3000.79	I	-	[5]	Bl	2997.703	Re I	15	-	-
3003.736	Zr II	15	15	-	3000.788	U	2	-	-	2997.666	Mo	2	3	-
3003.680	Ce	2	-	-	3000.619	W II	4	20	-	2997.647	Os	40	8	-
3003.65	Lu	-	3 h	Me	3000.607	Zr II	-	2 wh	-	2997.615	Ru	30	5	-
3003.637	Ti I	2	-	-	3000.576	Re	8	-	-	2997.603	W	8	12	-
3003.632	Ir I	60	30	-	3000.546	Co I	80	1	-	2997.491	Pd II	-	2 wh	-
3003.629	Ni I	500 R	80	-	3000.46	Yb	3	20	-	2997.486	Cb	1	10	-
3003.587	U	2	-	-	3000.454	Pr	5	15	-	2997.468	Ce	6	-	-
3003.562	Ce	12 s	1	-	3000.452	Fe I	100	80	-	2997.426	Ru I	30	5	-
3003.485	Ru I	30	-	-	3000.45	Mo	20	-	-	2997.413	Mo	20	-	-
3003.482	Os	60	12	-	3000.45	A II	-	[10]	Rt	2997.408	Ir I	25	2	-
3003.457	V II	8	70	-	3000.330	Ce	5	-	-	2997.364	Cu I	300	30	IBu
3003.315	U	3	1	-	3000.240	W	7 s	8	-	2997.354	U	2	2	-
3003.284	V	5	-	-	3000.232	Mo	25	30	-	2997.346	Mo	3	25	-
3003.180	Pr	5	20	-	3000.227	Ru I	30	1	-	2997.314	Ca	25	5	-
3003.172	Mo	10	-	-	3000.18	I	-	[18]	Bl	2997.301	Fe II	-	60	-
3003.070	U	4	-	-	3000.14	A	-	[5]	Rt	2997.2	Cs	-	[2]	Bs
3003.031	Fe I	200	100	I	3000.132	Ce	2	-	-	2997.192	Ir I	25	1	-
3003.00	A	-	[3]	Rt	3000.119	Cb	2	5	-	2997.15	Th	10	4	-
3002.88	Cs	-	[6]	Bs	3000.096	Hf II	40	30	-	2997.143	Ce	2	-	-
3002.869	Gd	15	20	-	3000.094	U	3	1	-	2997.13	Sn II	-	[2]	Mc
3002.821	W	7	6	-	3000.068	Ce	10	-	-	2997.124	U	3	2	-
3002.748	Ce	20	1	-	3000.065	Fe II	-	10	-	2997.08	V I	5 h	-	Me
3002.74	Mo	10	-	-	3000.027	Ir	30	-	-	2997.07	Pr	-	10	-
3002.74	Pb II	-	10	Gs	2999.97	Tb	3	10	Ex	2997.05	Te	-	[50]	Bl
3002.728	Ti I	10	3	-	2999.84	Kr II	-	[40 h]	Me	2997.01	Ta	5 h	2 h	-
3002.66	Er	15	3	-	2999.808	Ru	8	50	-	2996.980	Th	10	10	-
3002.652	Pd I	100 r	60	-	2999.777	Ti I	2	-	-	2996.970	W	8	9	-
3002.65	V I	10	-	-	2999.773	Th	10	8	-	2996.966	Sm	8	3	-
3002.649	Fe II	20	150	-	2999.641	Ca I	20	10	IWg	2996.944	Yt I	12	5	-
3002.645	U	2	-	-	2999.592	Re I	125	-	-	2996.895	Ru	60	5	-
3002.61	Yb	15	150	-	2999.56	Rb I	-	[2]	Ok	2996.885	Ta	2	5 h	-
3002.491	Ni I	1000 R	100	-	2999.550	Pd II	-	100 h	-	2996.797	Cb	1	5	-
3002.489	Mn	12	-	-	2999.541	Ir I	35	1	-	2996.77	Hf II	-	2	-
3002.485	Ir	6	-	Ab	2999.513	Cs	-	8	-	2996.76	Dy	2	-	-
3002.48	Kr II	-	[2 hl]	Me	2999.512	Fe I	500	300	S	2996.759	U	3	2	-
3002.45	Cl	-	[8]	Jv	2999.503	In II	-	[10]	Ps	2996.726	I II	-	[15]	Ke
3002.45	Tb	3	-	Ed	2999.480	Ce	6	-	-	2996.72	Br	-	[4]	Bl
3002.442	V	10	1	-	2999.432	Ce	6	-	-	2996.67	Ca I	7	-	Sd
3002.441	U	3	-	-	2999.397	In II	-	[30]	Ps	2996.662	Ir	3	-	-
3002.39	Th	15	12	-	2999.316	In II	-	[10]	Ps	2996.63	Cl II	-	[40]	Ks
3002.38	Dy	10	1 h	-	2999.238	V I	12	3	-	2996.60	Kr II	-	[20]	Me
3002.376	Ce	12 s	-	-	2999.215	U	10	6 h	-	2996.580	Cr I	300 r	125	-
3002.37	Si	-	3	Sy	2999.21	Xe	-	[8 wh]	Hu	2996.552	Co I	9	-	-
3002.334	Fe II	-	5	-	2999.202	Ce	3	-	-	2996.513	Cb	3	3 h	-
3002.28	W II	1	15	-	2999.20	Fe	5	3	-	2996.5	Cd	-	[10]	Es
3002.269	Pt I	200	30	-	2999.093	Th	12	12	-	2996.489	V I	8	1	-
3002.253	Ir I	50	10	-	2999.066	Ce	15	-	-	2996.476	Sm	6	-	-
3002.213	Mo	40	3	-	2999.056	Gd	40	30	-	2996.47	Ca	-	5	Ad
3002.212	Cb	5 W	30	-	2999.05	Tb	20	10	Ex	2996.391	Rb I	5	-	-
3002.136	Ce	20	1	-	2999.033	U	8	2	-	2996.391	Fe	90	50	-
3002.067	Ru I	6	-	-	2999.014	Ir I	2	-	-	2996.379	Er	12	1 h	-
3002.03	Yb	-	15	-	2998.89	Te	-	[10]	Bl	2996.293	Mo	1	20	-
3001.977	W	10	9	-	2998.890	Ru	50	100	-	2996.15	Cs	-	[2]	Bs
3001.90	V I	18 h	3	-	2998.855	Fe II	-	3	Do	2996.095	U	6	4	-
3001.85	Hf II	5	1	m	2998.787	Cr I	200 r	70	-	2996.078	Ir I	50	2	-
3001.85	Cb	-	15 wh	-	2998.769	Ce	15	-	-	2996.03	Cd	-	25	-
3001.82	Al	-	[10]	Sy	2998.687	W II	6	12	-	2996.01	Tb	10	3	Ex
3001.751	V	1	30	-	2998.626	V I	2	-	-	2995.998	V II	5	70	-
3001.70	Sb II	-	[15]	Lg	2998.553	Re	8	-	-	2995.991	Ru	4	50	-
3001.660	U	4 r	-	-	2998.517	U	2	-	-	2995.987	W	8	9	-
3001.65	Ne II	-	[25]	Bn	2998.483	Zr II	1	2 h	-	2995.916	Ru	8	-	-
3001.642	Ru I	60	3	-	2998.384	Cu I	20	2 h	IBu	2995.875	Sm	3 h	-	-
3001.545	Ta	1	-	-	2998.38	Yb	-	3	Me	2995.86	Yb	2	10	-
3001.51	Cd II	-	[10]	Tk	2998.362	U	6	2	-	2995.84	Lu	-	15 hl	Me

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2995.840	Fe	3	1	2992.645	Mo	1	10	2990.044	Cb	-	3
2995.78	Tb	20	-	2992.63	C II	-	20 h	2990.00	Cl	-	[5]
2995.752	Ti	10 h	70 wh	2992.61	Fe	2	2	2989.944	Cb	-	5 wh
2995.739	W	6	5	2992.595	Ni I	80 R	10	2989.910	Ti I	2	-
2995.71	U	5	2	2992.59	O	-	[10 h]	2989.89	Mo	-	15
2995.67	Te	-	[15]	2992.577	Ru	4	18	2989.877	U	8	6
2995.644	Ce	30	1	2992.521	Sm	4 d	-	2989.87	Ta	2 h	2 h
2995.62	Eu	2	-	2992.45	Cr	-	18	2989.801	Mo	25	3
2995.612	V I	2	-	2992.438	Ne I	-	[150]	2989.78	Tb	10	5
2995.533	Mo	-	15	2992.420	Dy	3	-	2989.748	V	2	5
2995.524	Al II	-	[6]	2992.41	Fe	2 h	1 h	2989.655	Ru I	30	2
2995.516	U	2	2	2992.39	Ta	2 h	1 h	2989.605	U	3	-
2995.451	Dy	2	-	2992.379	V	-	4	2989.595	V	8	40
2995.378	Re	20	-	2992.372	Re I	100	-	2989.59	In	-	2
2995.350	U	2 h	-	2992.366	Ce	6	-	2989.588	Co I	75 R	30
2995.34	Cs	-	[20]	2992.3	Cd	-	[10]	2989.575	Ce	6	-
2995.27	Fe	4	2	2992.268	Mo	1	15	2989.55	Er	5 d	1
2995.270	Th	10	4	2992.229	Ce	10	-	2989.526	Os	5	4
2995.258	W	10	8	2992.21	K I	15 R	-	2989.502	W	-	4
2995.255	Yt	8	2	2992.169	W	7	4	2989.497	Ta	200	15
2995.24	Eu	15	-	2992.112	Os	20	8	2989.395	U	5 r	2
2995.157	Ce	3	-	2992.110	Mn	5	-	2989.330	Ru	12	1
2995.150	Co I	50	1	2992.089	Ru	2	40	2989.313	Ca	4	-
2995.103	Cr I	200 r	75	2992.00	Hf	8	1	2989.30	Ca	-	6
2994.99	Au II	-	100	2991.97	Tb	10	5	2989.300	V	1	20
2994.964	Ru I	80	40	2991.950	Cb	1	100	2989.287	Er	18	1
2994.958	Ca I	25	3	2991.94	W	5	-	2989.27	U	50	4
2994.89	U	2 d	-	2991.898	Ce	10	-	2989.194	Cr	10	90
2994.802	Yb	10	80	2991.886	Cr I	125 r	60	2989.127	Os	12	40
2994.737	Cr	3	2	2991.870	Yb	4	20	2989.11	U	2 d	1
2994.734	Nd	3	2	2991.839	Re	2	-	2989.054	Ta	40 W	5 h
2994.728	Cb	100	300	2991.789	Ti I	2	-	2989.029	Br I	250 wh	100 wh
2994.538	V	2 h	50	2991.754	Cu	15	-	2989.019	Ca	2 h	-
2994.507	Fe I	2	-	2991.743	Rh I	5	-	2989.000	U	2	-
2994.5	Rn	-	[20]	2991.735	V	-	5	2988.98	Ca I	5	-
2994.48	Er	6 d	1	2991.73	U	2	-	2988.979	Ir I	35	-
2994.460	Ni I	125 R	10	2991.73	Xe II	-	[3]	2988.97	Te	-	[10]
2994.451	U	3	2	2991.715	Ce	10	-	2988.952	Sc I, II	20 s	2 d
2994.44	Sn II	-	[3 h]	2991.693	Th	10	8	2988.948	Ru I	250	100
2994.429	Fe I	1000 R	600 r	2991.637	Fe	100	80	2988.940	Fe	2	1
2994.418	Ce	12	-	2991.621	Ru	50	100	2988.924	Sm	4	4 h
2994.33	Tm	2	10	2991.618	Dy	2	1 h	2988.885	W	6	12
2994.280	Al II	-	[3]	2991.570	Sm	12	10	2988.885	Ce	3	-
2994.250	Ne I	-	[3]	2991.435	Cb	-	10	2988.845	Sm	6	5
2994.137	Ce	4 w	-	2991.41	Hg II	-	5	2988.792	Cb	2	2
2994.09	Er	3	-	2991.406	Zr II	8	3	2988.77	Zr II	-	6 wh
2994.069	Cr I	150	50	2991.400	Ce	2	-	2988.715	Dy	2	-
2994.029	U	4	-	2991.396	Ir I	6	-	2988.71	U	5 d	4
2993.96	Cb	-	50	2991.39	I	-	[20]	2988.69	Kr II	-	[3 whl]
2993.94	Yb	1	7	2991.364	Dy	2	1	2988.679	Mo	25	2
2993.90	Tm	10	-	2991.34	Eu	80	40	2988.649	Cr I	200 r	150
2993.864	I	-	[70]	2991.248	U	3	-	2988.60	Ca	10	5
2993.826	Sm	10	4	2991.246	Ta	50	10	2988.59	Tb	10	7
2993.807	Cb	2	5	2991.145	V I	2	-	2988.581	Ta	40	20
2993.803	Th	12	15	2991.095	Ni I	15	-	2988.5	Li	-	15
2993.699	U	5 h	2 h	2991.095	Fe	1	-	2988.479	Re I	40	-
2993.629	Ce	3	-	2991.065	Th	15	10	2988.474	Fe I	60	30
2993.629	Ir	2	-	2991.00	Sn II	-	[2 h]	2988.45	F	-	[10 r]
2993.611	W	12	10	2990.99	As I	10	18	2988.42	U	2	1
2993.571	Os	15	8	2990.989	Ti I	7	-	2988.395	I	-	[15]
2993.515	Mo	15	25	2990.988	U	2	2	2988.36	Rh	2	2
2993.4	K	-	[10]	2990.948	V I	50	5	2988.262	Os	8	1
2993.355	U	5	2 h	2990.873	Ce	40	1	2988.234	Th	15	20
2993.342	Bi I	200 wh	100 wh	2990.850	W II	-	10	2988.228	Mo	25	1
2993.272	Ru I	60	9	2990.811	Hf II	6	2	2988.195	Ir	3	-
2993.27	Tm	25	10	2990.78	Cs	-	[2]	2988.094	Ru	8	-
2993.183	Re	15	-	2990.73	Te	-	[5]	2988.053	Ni II	-	4
2993.179	Nd	40	2	2990.710	W	10 s	6	2988.021	V II	10	80
2993.135	Ta	5	2 h	2990.617	Ir I	35	3	2987.99	Ga	-	6
2993.117	Dy	2	-	2990.582	U	3	2	2987.99	Si	-	[5]
2993.09	Cl II	-	[8]	2990.54	Xe II	-	[8]	2987.958	W	8	4
2993.064	Ti I	2	-	2990.540	Tm	80	30	2987.95	U	2 d	2
2993.058	Ir	8	-	2990.497	Ti I	6	-	2987.95	Ti II	-	[10]
2993.038	Gd	3	3 h	2990.392	Fe	150	100	2987.92	I	-	[12]
2992.989	U	2	-	2990.391	Yt	3	-	2987.920	Mo	25	30
2992.982	V	-	20	2990.36	Yb	3	15	2987.892	Dy	2	-
2992.957	Ru	12	1	2990.291	Ru I	30	1	2987.802	U	5	2
2992.918	W	8	4	2990.28	Au II	-	50	2987.799	Zr II	3	10
2992.913	Sm	5	1	2990.27	Ho	-	10	2987.705	Ru	30	4
2992.89	Tm	3	20	2990.258	Cb	5	200	2987.651	Sm	5 h	-
2992.84	Ga II	-	[2]	2990.258	Eu	12	-	2987.648	Si I	100	100
2992.838	Mo	20	30	2990.210	U	4	-	2987.646	Ir	5	1
2992.817	Re	3 W	-	2990.16	Ti II	-	80 Wh	2987.585	Co	2	-
2992.717	U	8	6	2990.130	Zr II	2	4 h	2987.55	Cb	1 w	10 w
2992.66	I	-	[12]	2990.046	Ti I	7	-	2987.543	Ce	2	-

2987.5—2979.8 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2987.518	U	4	—	—	—	2985.084	U	3	2	—	—	2982.45	Mo	—	—	10	—
2987.449	Rh I	40	20	—	—	2985.079	Yb	5	30	—	—	2982.414	Ir I	15	—	—	—
2987.4	Rn	—	[20]	—	Pe	2985.049	Cb	2h	50	—	—	2982.398	Rh	2	—	—	—
2987.351	Co	8	—	—	—	2985.032	Ce	3	—	—	—	2982.263	Co I	9	—	—	—
2987.35	Mo	—	25	—	—	2985.0	Rn	—	[3]	—	Pe	2982.235	U	4	4	—	—
2987.292	Fe I	300	200	S	—	2984.993	Sm	7	1	—	—	2982.232	Fe II	5	10	—	—
2987.289	Cb	5	4	—	—	2984.88	Mo	—	25	—	—	2982.23	Yt II	3	4	—	—
2987.287	W II	8	15	—	—	2984.866	Ce	3	—	—	—	2982.23	Xe	—	[2]	—	Hu
2987.2	Cd	—	[25]	—	Es	2984.830	Fe I, II	200 r	400	—	—	2982.215	W II	3	12	—	—
2987.162	Co I	75 R	50	—	—	2984.826	Cr	12	—	—	—	2982.183	Re	30 W	—	—	—
2987.06	U	2	1	—	—	2984.81	Yb	—	5	—	—	2982.173	V I	2	—	—	—
2987.04	Tb	10	5	m	—	2984.762	Re	3	—	—	—	2982.134	Mo	20	—	—	—
2986.989	Rh I	80	20	—	—	2984.713	Ce	4	—	—	—	2982.125	Os	8	4	—	—
2986.950	Nd	3	2	—	—	2984.656	Ir	2h	—	—	—	2982.11	Au II	—	15	—	—
2986.92	In	—	2	Cx	—	2984.613	U	12	8	—	—	2982.106	Cb	10 w	80	—	—
2986.920	Eu	25	—	—	—	2984.575	Fe	2	—	—	—	2982.062	Fe II	—	90	—	—
2986.912	Mo	3	25	—	—	2984.560	Ce	20	—	—	—	2982.048	Th	150	5	—	—
2986.9	Pb II	—	[20]	—	Ea	2984.430	Na II	20	[80]	—	—	2982.03	Cs	—	[2]	—	Bs
2986.89	Cs	—	[2]	—	Bs	2984.363	Hf II	—	2	—	—	2981.960	Ta	15	3	—	—
2986.840	Cb	1	5 h	—	—	2984.355	Ta	30	10	—	—	2981.935	Ru	60	3	—	—
2986.82	Xe II	—	[8]	—	Hu	2984.336	La II	2	2	—	—	2981.930	V	—	40	—	—
2986.807	Ta	20 d	100	—	—	2984.290	Os	5	5	—	—	2981.905	Ce	15	—	—	—
2986.788	Th	12	5	—	—	2984.256	Yt I	12	10	—	—	2981.89	Cd I	50	[10]	—	Fl
2986.668	Ce	10	—	—	—	2984.143	W	10	8	—	—	2981.854	Fe I	100	50	—	—
2986.653	Fe	15	—	—	—	2984.133	Co	4	—	—	—	2981.850	Th	8	3	—	—
2986.62	Be I	10	—	—	Ps	2984.131	Ni I	50 R	10	—	—	2981.809	U	3	2	—	—
2986.616	Ir	3	—	—	Ab	2984.106	Ce	2	—	—	—	2981.80	Br	—	[3]	—	Bl
2986.614	Fe II	—	30	—	—	2984.05	Hf	20	5	—	—	2981.74	Hg II	—	2	—	Nu
2986.52	Tm	50	150	—	Me	2984.050	U	3	2	—	—	2981.651	Ni I	80 r	20	—	—
2986.48	Br	—	[4]	—	Bl	2984.026	Cr	15	4	—	—	2981.643	Cb	3	4	—	—
2986.473	Cr I	125 r	125	—	—	2983.99	In	—	2	Sq	—	2981.629	W	7	6	—	—
2986.460	Fe I	100	60	—	—	2983.988	Mo	—	25	—	—	2981.53	B II	—	2	Sy	—
2986.457	Bo I	15	—	—	—	2983.98	Yb	10	70	—	—	2981.497	Th	8	5	—	—
2986.42	W	—	10	—	—	2983.94	Kr II	—	[2 whl]	—	Me	2981.49	Tm	60	100	—	Me
2986.418	Ta	10	3	—	—	2983.918	Ce	6	—	—	—	2981.448	Ti I	20	8	—	—
2986.40	Cb	—	5 wh	—	—	2983.91	Cs	—	[2]	—	Bs	2981.446	Fe I	300	200	S	—
2986.335	Ru	20	25 wh	—	—	2983.818	Th	10	10	—	—	2981.395	Ce	2	—	—	—
2986.311	Fe	3	—	—	—	2983.809	Mo	20 r	—	—	—	2981.362	Th	5	5	—	—
2986.208	Ce	2h	—	—	—	2983.793	Er	9	1	—	—	2981.34	Cd I	200 R	[40]	—	Fl
2986.202	Rh I	150	60	—	—	2983.756	U	2	2	—	—	2981.325	Sm	10	—	—	—
2986.182	W	6	2	—	—	2983.747	Pt I	6	—	—	—	2981.202	V	4	60	—	—
2986.18	Xe	—	[5]	—	Hu	2983.69	Yb	2	8	—	—	2981.190	Ta	15	5	—	—
2986.173	Ir I	25	5h	—	—	2983.626	Mo	1	25	—	—	2981.116	Rh I	5	—	—	—
2986.162	Mo	4	50	—	—	2983.574	Cb	5	15 wh	—	—	2981.110	W	6	3	—	—
2986.137	Cr I	6	8	—	—	2983.572	Fe I	1000 R	400 r	—	—	2981.040	U	2	2	—	—
2986.09	Be I	8	—	—	Ps	2983.546	V	10	60	—	—	2981.016	Zr II	10	10	—	—
2986.051	Re	4	—	—	—	2983.51	U	2	2	—	—	2981.012	Re	15 h	—	—	—
2986.001	Mn	20	—	—	—	2983.45	La II	—	2	—	—	2980.962	Sb	—	[125 hd]	—	Lg
2985.995	Cr I	25 r	15	—	—	2983.438	Sm	8	4	—	—	2980.958	Fe II	—	10	—	—
2985.954	Cu	3	—	—	—	2983.422	Ni I	10	—	—	—	2980.958	Ru	10	50	—	—
2985.93	Dy	4	2	—	Ed	2983.343	I	—	[20]	—	Ke	2980.922	Ne I	—	[50]	—	Ps
2985.907	Ce	10	—	—	—	2983.306	Ti I	25	10	—	—	2980.831	Re	40	—	—	—
2985.9	K	—	[5]	—	MI	2983.3	Rn	—	[3]	—	Pe	2980.810	Hf	50	10	—	—
2985.88	Yb	2	9	—	—	2983.24	Te	—	[10]	—	Bl	2980.791	Cr I	75 R	2	—	—
2985.87	W	6	12	—	—	2983.223	Er	12	1	—	—	2980.790	Ta	10	—	—	—
2985.849	Cr I	25 r	15	—	—	2983.141	Cb	2	2	—	—	2980.752	Sc I	20	9	—	—
2985.841	Mo	10	4	—	—	2983.13	Tm	10	4	—	Me	2980.717	Cb	3	50	—	—
2985.823	Ru	20	—	—	—	2983.085	Rh I	35	—	—	—	2980.69	Yt II	2	10 h	—	—
2985.818	Ce	12	—	—	—	2983.058	Er	9	1	—	—	2980.69	U	6	2	—	—
2985.800	Ir I	25	2	—	—	2983.045	Mo	10	1	—	—	2980.655	Pd II	—	200 R	—	—
2985.795	U	2 s	2	—	—	2983.020	Th	10	6	—	—	2980.649	Ir I	15 h	10	—	—
2985.79	Br	—	[4]	—	Bl	2983.016	V	2	10	—	—	2980.642	Ne I	—	[40]	—	Ps
2985.77	Pr	—	25	—	—	2982.98	Tb	—	10	—	Ex	2980.628	Cd I	1000 R	500	—	—
2985.75	La II	2	2	—	—	2982.966	Ce	4	—	—	—	2980.614	Na II	—	12	—	—
2985.74	Fe	3	2	—	—	2982.91	Cb	—	5 h	—	—	2980.61	Hg II	—	[3]	—	Ps
2985.690	Ta	2h	1	—	—	2982.902	Os	40	10	—	—	2980.6	P II	—	[5 h]	—	Gu
2985.659	W	6	3	—	—	2982.894	Sm	4	—	—	—	2980.539	Fe	100	70	—	—
2985.64	Ho	—	10	—	Ex	2982.89	Ca I	2	2	—	Fl	2980.538	Yt	8	30	—	—
2985.614	Os	10	4	—	—	2982.87	In	—	30	—	—	2980.52	Pr	—	25	—	—
2985.550	Fe II	80	300	—	—	2982.83	W	7 l	4	—	—	2980.409	Ce	10	—	—	—
2985.477	Ti I	5	—	—	—	2982.78	Cl II	—	[18]	—	—	2980.344	U	4	4	—	—
2985.47	Te	—	[15]	—	Bl	2982.78	Mo	—	10	—	—	2980.338	Th	15	10	—	—
2985.455	Mo	—	—	—	—	2982.765	Cu I	6	—	—	—	2980.308	Ta	2	—	—	—
2985.432	La II	2	3	—	—	2982.748	V	4	50	—	—	2980.296	Ti I	2	—	—	—
2985.389	Zr I	50	3	—	—	2982.740	U	12	12	—	—	2980.285	U	4	2	—	—
2985.38	Tm	8	20	—	Me	2982.721	Hf	30	1	—	—	2980.222	Ir I	3	—	—	Ab
2985.33	Nd	2	—	—	—	2982.663	Ne I	—	[250]	—	Ps	2980.21	Hf II	5	1	—	—
2985.33	Kr	—	[4 whl]	—	Me	2982.65	Yb	1	4	—	—	2980.160	Gd	25	25	—	—
2985.325	Cr	10	60	—	—	2982.609	W	10	9	—	—	2980.160	Pb	2	—	—	—
2985.308	Mo	—	8	—	—	2982.603	Ir I	5	—	—	—	2980.02	Te	—	[15]	—	Bl
2985.3	Cs	—	[2]	—	Bs	2982.557	Os	10	6	—	—	2979.959	Ru	60	80	—	—
2985.249	Sm	5	—	—	—	2982.541	Ce	3	—	—	—	2979.950	Er	10	—	—	—
2985.246	Th	15	12	—	—	2982.5	Cs	—	[2]	—	Bs	2979.875	Cb	2	30	—	—
2985.170	V	1	60	—	—	2982.49	Yb	3	15	—	—	2979.873	Mo	3	20	—	—
2985.162	Mo	15	8	—	—	2982.46	Hg II	—	[15]	—	Ps	2979.87	Fe	4	2	—	—

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2979.858	W	10	10	-	2977.548	Ce	8	-	-	2974.778	Fe	10	6	-
2979.85	Yb	1	4	-	2977.542	Ta	20	1	-	2974.77	Ga II	-	[8]	Sy
2979.81	Kr II	-	[20]	Me	2977.539	V I	50	6	-	2974.725	Cb	-	10	-
2979.806	Pt	1	8	-	2977.52	Yb	-	4	-	2974.714	Ne I	-	[250]	Ps
2979.806	Ne I	-	[50]	Ps	2977.482	Ru	30	60	-	2974.702	Ir	3	-	-
2979.741	Cr	10	60	-	2977.47	U	3	2	-	2974.605	Ce	2	-	-
2979.721	W	6	6	-	2977.461	Ce	10	-	-	2974.593	Yt I	12	10	-
2979.72	Ru	30	40	-	2977.435	W II	-	3	-	2974.555	Cb	2	1	-
2979.704	Mo	4	-	-	2977.426	Dy	2	-	-	2974.540	Ir I	4	-	-
2979.683	Sc II	2 h	10	-	2977.306	Re	20	-	-	2974.482	Ce	3	-	-
2979.680	Eu	3	-	-	2977.270	Mo	15	1	-	2974.48	Er	4	1	-
2979.67	Yb	-	2	-	2977.266	U	10	10	-	2974.463	U	3	2	-
2979.662	Na II	35	[40]	Fr	2977.258	Cs II	-	[2]	Ot	2974.394	W II	8	12	-
2979.658	Dy	2	-	-	2977.227	Ru	50	80	-	2974.335	Ru I	30	2	-
2979.63	Ho	20	40	Ex	2977.213	W	10	6	-	2974.29	Tm	10	30	Me
2979.58	In	-	10	Cx	2977.132	Na II	3	[12]	Fr	2974.236	Na II	-	[5]	Fr
2979.44	Tm	3	10	Me	2977.119	Hf	-	3	-	2974.224	V I	15	-	-
2979.432	Os	12	6	-	2977.099	W	10	7	-	2974.12	Hg II	-	[10]	Ps
2979.367	Cu I	9	-	IBu	2977.072	Sm	12	4	-	2974.105	Mn	15	-	-
2979.356	Ce	2	-	-	2976.975	Pr	-	20	-	2974.101	Ir I	10	5	-
2979.352	Fe II	20	100	-	2976.925	Ru	60	5	-	2974.098	Cb	5	200	-
2979.32	Xe II	-	[200]	Hu	2976.923	Mo	-	20	-	2974.09	Hf II	3	6	Me
2979.28	Mo	3	-	-	2976.905	Ce	8	-	-	2974.081	U	2	2	-
2979.280	Hf	18	1	-	2976.83	La II	-	3	-	2974.04	Kr II	-	[25 h]	Me
2979.199	Ti II	-	100 wh	-	2976.81	Cs	-	[2]	Bs	2974.03	Yt II	5	12	-
2979.19	U	4	2	-	2976.794	W	10 s	6	-	2974.030	Rh I	10	-	-
2979.184	Zr II	10	10	-	2976.765	Ta	3 h	40	-	2974.025	W	6	4	-
2979.183	Pt II	1	2	-	2976.727	Ir I	6	-	-	2974.018	Ce	3	-	-
2979.17	W	-	5	-	2976.718	Cr	1	12	-	2974.013	Th	10	10	-
2979.107	V	-	35	-	2976.649	Th	10	5	-	2974.006	Sc I	15	8	-
2979.095	Fe II	-	30	-	2976.613	Zr II	5	8	-	2974.002	Mo	1	5	-
2979.08	Eu	2 w	-	-	2976.586	Ru	60	200	-	2973.991	Ru	50	5	-
2979.06	I	-	[12]	Bl	2976.55	Fe I	15	10	-	2973.969	V	-	40	-
2979.05	A II	-	[40]	Rt	2976.520	V I	35	2	-	2973.826	Ru	-	25	-
2979.050	Na	-	[5]	Fr	2976.512	Sm	4	3	-	2973.743	Er	3	-	-
2978.943	Cb	1	50	-	2976.474	W II	10	12	-	2973.69	Te	-	[50]	Bl
2978.936	V I	10	-	Me	2976.445	Ir	3	5	-	2973.55	I	-	[20]	Bl
2978.90	Yb	-	3	-	2976.42	Si	-	[2]	Sy	2973.536	Th	5	10	-
2978.87	Kr II	-	[25]	Me	2976.39	Xe	-	[4]	Hu	2973.45	Br	-	[5]	Bl
2978.848	Fe II	-	7	-	2976.315	Ti I	8	2	-	2973.436	Ce	8	-	-
2978.810	Ce	6	-	-	2976.308	U	12	8	-	2973.39	Tm	15	40	Me
2978.754	Ta	200 r	30	-	2976.3	Rn	-	[3]	Pe	2973.373	Hf	15	15	-
2978.641	Ru	50	150	-	2976.292	Re I	50 w	-	-	2973.31	Cb	-	5	-
2978.64	Th	1	100 h	-	2976.28	Kr II	-	[3 h]	Me	2973.263	U	4	2	-
2978.640	W	4	1	-	2976.26	Ta	2 wh	150	-	2973.237	Fe I	500 R	400 R	-
2978.609	Mo	2	20	-	2976.197	V	6	50	-	2973.23	Tm	15	-	Me
2978.563	Mn	12	-	-	2976.131	Fe	100	60	-	2973.186	Ce	2	-	-
2978.56	Cl	-	[6]	An	2976.100	Ta	40 l	5 h	-	2973.18	Dy	4	-	-
2978.528	Os	10	8	-	2976.020	Th	15	10	-	2973.134	Fe I	500 R	400 R	-
2978.43	Tm	30	10	Me	2975.939	Ce	20	-	-	2973.08	U	4	2	-
2978.426	Ir	3	5	-	2975.936	Fe II	3	40	-	2973.00	Pb	2	-	Kl
2978.380	W	-	10	-	2975.92	Kr II	-	[3 h]	Me	2973.00	Ho	20	-	Ex
2978.380	Ru	6	-	-	2975.91	Te	-	[100]	Bl	2972.961	Mo	20	1	-
2978.285	Mo	30	2	-	2975.882	Hf II	80	100	-	2972.915	W	4	2	-
2978.274	Cu I	10	1 h	IBu	2975.876	U	4	4	-	2972.89	Ca	-	5	-
2978.232	V	-	40	-	2975.82	Dy	2	-	-	2972.8	Cs	-	[2]	Bs
2978.208	Os	20	5	-	2975.70	Br	-	[3]	Bl	2972.614	Mo	20	50	-
2978.18	Yt II	3	10 h	-	2975.679	Er	5	2	-	2972.612	U	5	4	-
2978.180	Ta	-	150 l	-	2975.652	V	4	50	-	2972.60	Cl	-	[2]	Bl
2978.159	Re	40	-	-	2975.65	Cs	-	[2]	Bs	2972.60	Se	-	[10]	Bl
2978.140	U	10	6	-	2975.639	U	6	4	-	2972.582	Ce	5 h	-	-
2978.124	I	-	[15]	Ke	2975.614	Mo	-	20	-	2972.572	Cb	40	100	-
2978.121	Mn	10 h	-	-	2975.59	Eu	2	-	-	2972.48	Yb	-	3	-
2978.054	Zr II	12	12	-	2975.56	Yb	-	2	-	2972.465	Ru	12	35	-
2978.05	Fe	8	3	-	2975.558	Ta	200	50	-	2972.34	Kr II	-	[2 h]	Me
2978.014	Co I	30	-	-	2975.518	Ne I	-	[35]	Ps	2972.31	Xe II	-	[5]	Hu
2977.96	Nd	-	5	-	2975.483	Cr I	100 r	50	-	2972.279	Fe I	100	40	-
2977.946	W	-	12	-	2975.464	Co I	4	-	-	2972.279	Er	5 l	-	-
2977.941	Ce	5	-	-	2975.404	Mo	3	30	-	2972.254	V	2	50	-
2977.94	Te	-	[30]	Bl	2975.343	Os	15	8	-	2972.251	Os	12	8	-
2977.935	Ir I	8	-	-	2975.249	Re	20	-	-	2972.224	Th	4	3	-
2977.93	Ti I	5 s	-	Fl	2975.221	U	8	6	-	2972.22	Br	-	[25]	Bl
2977.90	Xe	-	[5 wh]	Hu	2975.19	Hg	-	[50]	Ps	2972.22	Ba	-	2	Py
2977.827	U	2	-	-	2975.13	Cs	-	[2]	Bs	2972.103	U	3	-	-
2977.80	Ti	-	50 wh	-	2975.08	W	-	10	-	2972.004	V	-	8	-
2977.769	Ce	10	-	-	2975.056	V I	15	2	-	2971.955	Ta	3	5	-
2977.765	Mo	1	25	-	2975.026	Re I	15	-	-	2971.906	Mo	2	40	-
2977.76	Tb	10	10	m	2974.991	Na II	15	[60]	Fr	2971.906	Cr	8	30 Wh	-
2977.681	Ir	8	-	-	2974.947	Ir I	25	10	-	2971.840	Ce	2 h	-	-
2977.681	Cb	1	300	-	2974.934	Ti I	15	5	-	2971.822	U	2	-	-
2977.679	Rh I	125	30	-	2974.921	Sm	6	-	-	2971.80	Kr II	-	[4 h]	Me
2977.678	W	6	-	-	2974.909	U	5	4	-	2971.771	Ru	10	15	-
2977.637	Os	30	12	-	2974.88	Xe II	-	[20 whl]	Hu	2971.76	Fe	5	-	Fl
2977.6	P	-	[5 h]	Gu	2974.859	Ru	-	5	-	2971.70	Mg II	10	-	-
2977.595	Hf II	30	25	-	2974.79	Eu	3	-	-	2971.673	W	10	8	-

2971.6—2963.9 A.

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R	
2971.629	U	2	1	2968.87	Tb	10	3	2966.13	Kr	-	[3 whs] Me
2971.60	Ga II	-	[5]	2968.822	U	2	2	2966.127	Ir I	10	-
2971.571	V	-	10	2968.812	Hf II	30	30	2966.123	Ce	3	-
2971.5	Rn	-	[3]	2968.80	Pr	3	8	2966.12	U	15	25
2971.482	Th	10	10 w	2968.780	W	6	-	2966.051	Cr	2	70
2971.46	Se	-	[10]	2968.774	Mo	-	30	2966.05	La II	1 h	2
2971.39	Ir	-	15 h	2968.761	Er	12	2	2965.920	Ta	30	80
2971.260	Er	4 d	-	2968.732	Fe II	-	2	2965.871	Cb	-	3 h Me
2971.202	W	3	-	2968.691	Ce	8	-	2965.87	Tm	50	100
2971.2	Cd	-	[10]	2968.685	Th	6	3	2965.860	W	6	4
2971.196	Ce	3	-	2968.663	Rh I	125	30	2965.837	Ce	6	-
2971.145	Mo	-	3	2968.562	U	4	2	2965.811	Fe	25	15
2971.112	Cr I	80 r	15	2968.487	Ir I	12	2 h	2965.785	U	4	4
2971.082	Ir I	10	-	2968.482	Ru	15	-	2965.758	Re I	150 w	-
2971.064	U	12	12	2968.481	Fe	30	20	2965.750	Na II	-	[5] Fr
2970.91	Ga II	-	[2]	2968.446	Os	5	5	2965.711	Ru	20	-
2970.972	Os	40	10	2968.401	U	6	6	2965.707	Ti I	15	5
2970.967	Mn	3	-	2968.383	Cs II	-	[2]	2965.70	Nd	-	5
2970.922	Sm	15	-	2968.378	V	10	20 h	2965.68	Ti I	7	2
2970.91	W II	2	10 l	2968.362	Ce	3	-	2965.64	Cb	-	5 h
2970.88	Nd	-	5	2968.36	W	4 d	-	2965.546	Ru	60	200
2970.86	I	-	[12]	2968.3	Bi II	-	3	2965.545	Ta	150	50
2970.851	Cs II	-	[2]	2968.292	Cb	1 d	5	2965.501	Th	8	6
2970.83	Yb	2	20	2968.288	V I	10	-	2965.50	Cl	-	[10] Jv
2970.80	Rb	-	[40]	2968.231	Ti I	12	2	2965.480	Cb	5	2
2970.782	U	2 h	2	2968.207	Ir I	12	5 h	2965.420	Gd	3	3
2970.73	Cl	-	[5]	2968.20	W	6	4 d	2965.4	Cs	-	[2] Bs
2970.725	Na II	1	[2]	2968.177	Cr I	5 h	-	2965.377	U	3	2
2970.689	Os	8	5	2968.16	Rb	-	[20]	2965.32	Tb	10	-
2970.684	Fe II	-	10	2968.11	Kr	-	[2]	2965.270	Mo	8	40
2970.656	Ru	-	18	2968.051	Re I	40	-	2965.269	Ce	15	-
2970.65	Tb	5	3 h	2968.036	V	-	5	2965.255	Fe I	400	150
2970.57	Hf	-	3 h	2967.994	Ru	-	40	2965.231	Ti I	25	7
2970.564	Yb	150	150	2967.938	Er	5	1	2965.22	Er	4	-
2970.556	Ti I	10	4	2967.927	W II	2	10	2965.202	Ir I	25 h	5
2970.513	Fe II	30	100	2967.91	C II	-	6	2965.20	Ta	-	10
2970.484	U	2	2	2967.894	U	15	20	2965.19	Mg II	6	-
2970.483	Sm	6	-	2967.87	Mg II	10	-	2965.162	Ru I	80	20
2970.468	Cb	1	5	2967.866	Ce	2	-	2965.161	Rh	8	-
2970.421	V	-	8	2967.76	Tm	10	30	2965.16	Yb	-	4
2970.394	Cb	-	5	2967.642	Cr I	60 r	30	2965.135	Ce	8	-
2970.384	Ti I	30	8	2967.592	Hg I	10	-	2965.133	Ta	40	800
2970.36	Eu	2	-	2967.552	W	8	7	2965.125	Re I	100	-
2970.35	W	-	8 d	2967.546	V	1	12	2965.11	Kr II	-	[2] Me
2970.347	Si I	20	20	2967.517	Hg I	5	-	2965.1	Cd I	-	[5] Es
2970.316	Ce	10	-	2967.51	Rb	-	[40]	2965.037	Fe II	4	50
2970.105	Fe I	400	200	2967.341	Ru	30	-	2965.034	U	8	10
2970.07	Er	2	-	2967.315	Ce	2	-	2965.0	Cs	-	[8] Bs
2970.03	Nd	-	5 W	2967.31	C	-	6	2964.968	Yt I	6	5
2970.027	I	-	[20]	2967.278	Hg	100 w	100	2964.958	Mo	5	10
2969.955	Sm	10 d	10	2967.25	Kr II	-	[80 wh]	2964.93	Eu	2 d	-
2969.934	Fe II	-	15	2967.250	Re	15	-	2964.924	Th	8	6
2969.922	Ce	3	-	2967.239	Ir I	10	-	2964.876	Hf	50	10
2969.902	Ta	50 h	10 h	2967.231	Hf II	20	25	2964.811	Ta	3 w	3 h
2969.842	V II	-	8	2967.23	Br	-	[20]	2964.801	Ce	25 s	-
2969.835	Th	2 h	-	2967.225	Ti I	35	8	2964.76	Tb	10	3
2969.82	Lu	30	100	2967.21	Te	-	[300]	2964.76	Pr	10	10
2969.80	Xe	-	[6]	2967.20	Ne II	-	[8]	2964.75	Yb	15	25
2969.736	Mo	-	5	2967.108	Ce	8	-	2964.7	Cd	-	[5] Es
2969.73	U	2	2	2967.069	W	8	8	2964.630	Fe II	8	150
2969.628	Zr II	10	15	2967.004	Ir	6	-	2964.629	Ir	2 h	-
2969.624	W	10	10	2967.00	Mo	-	15	2964.62	Dy	2	-
2969.50	Tm	20	4	2966.929	Hf	25	4	2964.615	Os	8	5
2969.477	Fe I	60	60	2966.9	K	-	[2]	2964.563	Zr II	2	2
2969.473	Ir I	10	-	2966.900	Fe I	1000 R	600 r	2964.526	Ce	2	-
2969.470	Ta	150	80	2966.900	Co	30	-	2964.518	Er	20	4
2969.41	Ga II	-	[5]	2966.88	C II	2	-	2964.515	W	12	10
2969.39	Mo	-	15	2966.798	Ce	3	-	2964.48	Ho	-	10 h
2969.364	Ti I	3	1	2966.75	Yb	-	15	2964.40	Yb	1	2 h
2969.362	Fe I	80	80	2966.697	Mo	2	5	2964.344	Mo	1	6
2969.334	Dy	2	-	2966.661	U	6	8	2964.309	Ru	8	-
2969.23	Xe	-	[2]	2966.573	W	10	8	2964.3	Cd	-	[10] Es
2969.22	U	2	2	2966.57	La II	2	4	2964.254	Er	3	1
2969.189	Zr I	10	-	2966.559	Ru	12	-	2964.247	U	6	15
2969.069	Th	2	-	2966.52	Eu	2 h	-	2964.22	Fe	3	-
2969.02	Mg II	6	-	2966.514	Pb	2	-	2964.19	Xe	-	[6] Hu
2969.020	Sm	12	2	2966.396	Ru	3	25	2964.133	Fe II	-	7
2969.0	Cs	-	[8]	2966.390	Ti I	3	-	2964.113	Th	5	4
2968.997	Cr I	3	-	2966.388	U	3	4	2964.099	Ir	-	4
2968.981	V I	6	-	2966.24	Fe I	4	4	2964.062	Os	25	13
2968.973	Re	20	-	2966.22	Sb	-	2	2963.996	Ce	2	-
2968.961	Zr II	15	30	2966.201	In II	-	[20]	2963.98	Tb	10	3 h
2968.954	Ir I	12	5	2966.20	W	2	7	2963.91	Se II	-	[25] Bi
2968.954	Ru I	60	6	2966.185	Er	4	1	2963.910	Ta	50	10
2968.946	Hf II	12	6 h	2966.147	In II	-	[5]	2963.909	U	5	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2963.901	Er	5	1	-	2961.367	Ce	3	-	-	2958.102	U	4	2	-
2963.876	Ce	3	-	-	2961.324	Sm	4	-	-	2958.038	Ce	3	-	-
2963.86	W	-	10	-	2961.320	Mo	4	30	-	2958.018	Hf	30	5	-
2963.806	V I	10	7	-	2961.281	Fe II	3	40	-	2958.000	Ru I	60	5	-
2963.794	Mo	10	40	-	2961.179	U	8	10	-	2957.922	Th	8	8	-
2963.779	W	4	-	-	2961.165	Cu I	350	300	IBu	2957.922	W	7	7	-
2963.74	Au	-	10	-	2961.124	V I	12	-	-	2957.883	Re	2	-	-
2963.715	Ru I	60	5	-	2961.07	Br	-	[5]	BI	2957.844	U	4	2	-
2963.71	Fe	2 h	1 h	-	2961.05	Kr II	-	[4]	Me	2957.841	Ce	2	-	-
2963.706	Er	6	1	-	2961.036	Mo	-	10	-	2957.83	S	-	[8]	BI
2963.683	Cb	2	3	-	2961.019	W	6	12	-	2957.792	Ce	3	-	-
2963.610	Mn	20	-	-	2961.012	Oa	40	10	-	2957.762	Dy	3	-	-
2963.609	Th	6	4	-	2960.975	Ru	30	1 h	-	2957.749	Mo	3	1	-
2963.604	U	5	6	-	2960.942	U	15	25	-	2957.745	U	4	2	-
2963.56	Fe	2	1	-	2960.893	Gd	2	2	-	2957.675	Co	50	1	-
2963.560	Nd	30	-	-	2960.886	Ir I	20	5	-	2957.66	I II	-	[10 d]	Mu
2963.536	Rh	15	5	-	2960.870	Zr I	15	-	-	2957.633	Fe	2	2	-
2963.469	Cr	-	18	-	2960.84	Yb	1	5	-	2957.63	Yb	-	3	-
2963.43	Yb	2	20	-	2960.83	Cd II	-	[5]	Vs	2957.598	Ta	100	30	-
2963.427	W	5	1	-	2960.823	Hf II	18	20	-	2957.590	Th	10	8	-
2963.41	Xe II	-	[30]	Hu	2960.812	Sm	4	-	-	2957.56	Cr I	10 h	1 h	-
2963.402	Ru	60	150	-	2960.784	V II	-	15	-	2957.56	A	-	[5]	Rt
2963.4	Bi II	-	4	Cf	2960.78	Kr II	-	[5]	Me	2957.518	V I	20	125 r	-
2963.37	Nd	-	5	-	2960.751	Pt	25	4	-	2957.491	Fe	4	3	-
2963.322	Ta	300	100	-	2960.66	Fe	6	3	-	2957.49	I II	-	[30]	BI
2963.32	Lu	50	150	Me	2960.640	Ce	6	-	-	2957.483	Sm	5	-	-
2963.29	Ne II	-	[4]	Bi	2960.58	Tb	10	3	Ex	2957.381	Yt II	-	8	-
2963.259	Mn	12	-	-	2960.555	Fe	10	5	-	2957.365	Fe I	300	300	S
2963.249	V	-	20	-	2960.438	Ce	10	-	-	2957.364	Ir I	20	-	-
2963.24	K I	8 R	-	Fl	2960.299	Fe	60	30	-	2957.33	V I	10	-	-
2963.16	Yb	-	10	-	2960.29	Nd	-	5	-	2957.293	Ne I	-	[8]	Ps
2963.11	Kr	-	[2]	Me	2960.27	A	-	[20]	Rt	2957.26	W	-	10	-
2963.056	Ta	40	10	-	2960.241	Mo	3	15	-	2957.229	U	5	2	-
2962.994	Ir I	25	5	-	2960.23	Eu	150 W	-	-	2957.165	Ce	3	-	-
2962.910	La II	2	15	-	2960.228	Ru	5	-	-	2957.149	V I	7 h	-	-
2962.887	Mo	8	5	-	2960.177	Sm	8	5	-	2957.084	Os	10	6	-
2962.870	Re	20	2	-	2960.14	Kr II	-	[40 wh]	Me	2957.05	Tm	3	20	Me
2962.865	Nd	20	2	-	2960.140	W	10	3	-	2957.012	In I	50	25	Uh
2962.8	Cs	-	[2]	Bs	2960.120	Er	5	1	-	2956.971	Mn	12	1	-
2962.80	Tb	10	3 h	m	2960.112	Na II	1	[2]	Fr	2956.955	Er	6	1	-
2962.783	U	6	6	-	2959.998	Ba	-	3 wh	-	2956.902	Mo	1	30	-
2962.772	V I	60	60 r	-	2959.993	Ti I	18	2	-	2956.890	Cb	1	15	-
2962.744	Sm	7	5	-	2959.992	Fe	150	80	-	2956.859	Fe	5	4	-
2962.683	Zr II	15	20	-	2959.92	W	-	10	-	2956.84	Ta	1 h	100 l	-
2962.59	Fe	2	1	-	2959.850	U	8	12	-	2956.824	W	4	2	-
2962.517	Yb	3	15	-	2959.850	La II	4	5	-	2956.797	Ti I	35	8	-
2962.51	W II	-	10	Ln	2959.835	Fe	-	2	-	2956.780	U	6	6	-
2962.502	Er	8	2	-	2959.804	Mo	8	1	-	2956.707	Ce	15	-	-
2962.455	Ir I	10	-	-	2959.736	Ru I	12	2 h	-	2956.70	Fe I	25 h	8 h	-
2962.4	Cs	-	[2]	Bs	2959.72	In	-	2	Sa	2956.667	W	8	10	-
2962.395	Cr	8	-	-	2959.708	Ti I	15	-	-	2956.655	V	-	7	-
2962.372	Dy	2	1	-	2959.70	As	-	75	Ro	2956.603	Cr	-	18	-
2962.341	Ba	-	3 h	Sz	2959.682	Fe	150	10	-	2956.561	Ir	3	5	-
2962.334	Er	3	-	-	2959.65	Tm	20	60	Me	2956.55	A	-	[10]	Rt
2962.327	Os	20	8	-	2959.646	Rh I	5	-	-	2956.50	Te	-	[15]	BI
2962.269	Re	25	-	-	2959.599	Fe II	-	60	-	2956.495	Pd II	-	6 h	-
2962.212	Mo	-	20	-	2959.550	Cr II	-	18	-	2956.448	Er	5	1 h	-
2962.207	U	6	4	-	2959.5	Li	-	2	An	2956.438	U	2	2	-
2962.148	Os	30	15	-	2959.479	Eu	30	-	-	2956.330	Cr	18	1	-
2962.12	Fe I	8	4	-	2959.476	Mo	5	2	-	2956.30	Kr II	-	[3 h]	Me
2962.091	Ru	2	20 wh	-	2959.446	Ir I	5	-	-	2956.245	Sm	7	2	-
2962.032	Sm	3	-	Kn	2959.43	Te	-	[25]	BI	2956.21	Tb	10	40	Ed
2962.014	V II	1	10	-	2959.34	Fe	60	25	-	2956.152	Ru	5	-	-
2961.967	Sm	5	-	-	2959.163	Hf II	-	2	-	2956.131	Ti I	125	25	-
2961.849	Sm	4	-	-	2959.123	U	2	4	-	2956.12	Rb	-	[70]	Ok
2961.797	Hf I	20	30	-	2959.105	Ce	15	-	-	2956.102	Mn	20	1	-
2961.79	Yb	-	3	-	2959.095	Pt I	20	3	-	2956.060	U	10	60	-
2961.77	Ca	1 h	3	Ad	2958.99	Ti II	-	150 wh	-	2956.055	Mo	10	25	-
2961.757	Re I	30 w	-	-	2958.987	Sm	4	3	-	2956.046	Sm	6	-	-
2961.732	Cr	10	60	-	2958.97	Eu	7	-	-	2956.04	Yt II	7	15 h	Me
2961.708	W	6	10	-	2958.906	Re	8	-	-	2955.941	Ce	25	-	-
2961.69	Rh	2	-	-	2958.89	Eu	5 l	-	-	2955.849	Th	6	4	-
2961.689	Ru	60	3	-	2958.89	Er	6	1 h	-	2955.842	Ru	15	-	-
2961.676	Mn	1	2	-	2958.838	W	6	2	-	2955.838	Mo	2	30	-
2961.628	Cb	1	10	-	2958.73	Mo	-	10	-	2955.807	Ce	5	-	-
2961.58	Dy	2	-	-	2958.723	W	6	2	-	2955.8	K	-	[2]	MI
2961.529	Ru	5	50	-	2958.598	V	1	40	-	2955.799	V I	20	2	-
2961.5	Bi II	-	[2 h]	MI	2958.491	Pt II	1 h	3 h	Sh	2955.783	Zr II	10	30	-
2961.49	Th	-	12 wh	-	2958.44	Fe	3	2	-	2955.78	Lu	2	60 hl	Me
2961.472	Ir	12	-	-	2958.364	I	-	[25]	Ke	2955.73	Ne II	-	[40]	Bn
2961.47	Cd I	20	15	m	2958.35	Kr II	-	[20 wh]	Me	2955.648	U	12	10	-
2961.463	Ti I	5	-	-	2958.341	Os	8	4	-	2955.605	Th	6	4	-
2961.45	Nd	-	5	-	2958.284	Ti II	-	6 wh	-	2955.604	Ru	12	-	-
2961.41	Tm	5	10	Me	2958.142	Th	8	6	-	2955.603	Ce	18	-	-
2961.379	Ta	2	1	-	2958.12	Ta	2	-	-	2955.60	Gd	2	25	-

2955.5—2946.9 A.

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities				
		Arc	Spk.	[Dis.]	R			Arc	Spk.	[Dis.]	R			Arc	Spk.	[Dis.]	R	
2955.584	V	1	60	—	—	2952.459	Cr	—	20	—	—	2949.73	Lu	20 h	1	—	Me	
2955.55	Te	—	[10]	—	Bl	2952.395	Na II	—	[12]	—	Fr	2949.70	Fe	10	5	—	—	
2955.52	Zr II	1	3 wh	—	—	2952.369	U	2	2	—	—	2949.68	Rb	—	[10]	—	Ok	
2955.446	Cb	2 h	—	—	—	2952.344	Os	15	8	—	—	2949.626	V I	30	15 r	—	—	
2955.412	Rh I	20	—	—	—	2952.288	W II	12 s	30	—	—	2949.62	Hf II	—	3	—	Me	
2955.412	Ce	4	—	—	—	2952.28	Se II	—	[12]	—	Mz	2949.609	U	5	6	—	—	
2955.39	A II	—	[40]	—	Rt	2952.248	Ru	4	25	—	—	2949.54	Kr II	—	[15 h]	—	Me	
2955.386	Co	30	—	—	—	2952.244	Zr II	8	8	—	—	2949.532	Os	30	10	—	—	
2955.359	Ru	50	1	—	—	2952.221	Sm	8	2	—	—	2949.52	Te	—	[100]	—	Bl	
2955.31	Yb	3	9	—	—	2952.128	Dy	2	—	—	—	2949.502	Cb	—	5	—	—	
2955.284	Rh	6	—	—	—	2952.100	U	3	—	—	—	2949.500	Ru I	80	12	—	—	
2955.28	Pd II	—	5	—	Sh	2952.081	Ti II	—	25 wh	—	—	2949.44	Cr	—	18	—	—	
2955.156	Mo	1	25	—	—	2952.075	V II	35	150 R	—	—	2949.380	Rh I	2	—	—	—	
2955.13	Hg II	—	[100]	—	Ps	2951.922	U	8	4	—	—	2949.316	Ne I	—	[15]	—	Ps	
2955.100	Ce	2	—	—	—	2951.92	Br	—	[4]	—	Bl	2949.263	Re	15	—	—	—	
2955.087	U	5	4	—	—	2951.918	Ta	400 wl	200	—	—	2949.236	Th	3	2	—	—	
2955.06	Tm	4	10	—	Me	2951.90	Hf	8	—	—	—	2949.205	Fe II	2	—	—	—	
2955.038	Th	6	5 h	—	—	2951.82	Cd	—	25	—	—	2949.205	Mn	100	30	—	—	
2955.000	Os	8	5	—	—	2951.814	Mo	—	4 h	—	—	2949.20	Ca	1 h	2 h	—	—	
2954.98	W II	2	8	—	—	2951.793	W	6	3	—	—	2949.197	Ir	4	—	—	—	
2954.934	Sm	5 s	3	—	—	2951.777	Ce	4	—	—	—	2949.19	Ho	—	20	—	Ex	
2954.904	W	10	8	—	—	2951.69	Lu	20	80	—	Me	2949.168	V	6	80	—	—	
2954.889	Th	6	4	—	—	2951.687	Ce	4	—	—	—	2949.16	Eu	5 d	5	—	—	
2954.82	Te	—	[10]	—	Bl	2951.66	Pd II	—	2 h	—	Bx	2949.119	W	5	4	—	—	
2954.78	Xo	—	[2 wh]	—	Hu	2951.59	Cs	—	[2]	—	Bs	2949.105	I	—	[30]	—	Ke	
2954.779	Ir	—	5 h	—	—	2951.562	V	—	9	—	—	2949.098	Re	20 h	—	—	—	
2954.766	U	10	15	—	—	2951.56	Fe	10	4	—	—	2949.069	Pd II	—	4 h	—	—	
2954.76	Ti II	—	150 wh	—	—	2951.489	Ce	4	—	—	—	2949.069	Th	10	8	—	—	
2954.74	Co	2	100	—	—	2951.48	Te	—	[15]	—	Bl	2949.043	Ne I	—	[10]	—	Ps	
2954.7	Bi II	—	[2]	—	Cf	2951.479	Zr II	15	15	—	—	2949.042	Ir	4	—	—	—	
2954.655	Fe	100	70	—	—	2951.45	La II	1	3	—	—	2948.98	Yt II	—	3 h	—	Me	
2954.616	Re	10	—	—	—	2951.407	W	5	3	—	—	2948.95	Fe I	10	4	—	—	
2954.583	Ti	2	—	—	—	2951.379	Fe	4	2	—	—	2948.945	Zr II	12	20	—	—	
2954.531	Cb	2	5	—	—	2951.291	Ce	10	—	—	—	2948.936	U	2	4	—	—	
2954.514	Mo	—	3	—	—	2951.264	Tm	30	150	—	Me	2948.89	Cr I	8 wh	—	—	—	
2954.486	Ru I	100	20	—	—	2951.26	Cu I	3 h	—	—	—	2948.857	Ce	4	—	—	—	
2954.409	Ce	2	—	—	—	2951.24	Ca	1 h	2 h	—	—	2948.802	Er	9	1	—	—	
2954.394	Pd II	—	60 h	—	—	2951.231	Na II	40	[100]	—	Fr	2948.735	Ce	4	—	—	—	
2954.39	Au	—	50	—	—	2951.222	Ir I	10 h	3	—	—	2948.73	Ti II	—	[30]	—	El	
2954.39	I	—	[12]	—	Bl	2951.218	Pt	2 h	—	—	—	2948.726	Fe I	10	7	—	—	
2954.39	U	12	15	—	—	2951.207	Th	8	6	—	—	2948.719	Pb II	—	125	—	—	
2954.346	Fe	2	2	—	—	2951.19	Eu	2 h	—	—	—	2948.51	Ta	3	—	—	Ks	
2954.344	Re	25	—	—	—	2951.160	Mn	4	4	—	—	2948.433	Fe	80	70	—	—	
2954.332	V I	30	20	—	—	2951.10	Ne II	—	[4]	—	Bn	2948.432	Ir I	5	—	—	—	
2954.28	Kr II	—	[12 h]	—	Me	2951.098	Fe II	—	3	—	—	2948.405	Yt I	20	5 h	—	—	
2954.205	Hf	15	10	—	—	2951.07	U	6	2	—	—	2948.385	Ce	10	—	—	—	
2954.170	Mo	3	—	—	—	2951.05	Rb	—	[5]	—	Ok	2948.323	Dy	2	1	—	—	
2954.098	Ru	6	20	—	—	2951.02	Yb	1	4	—	—	2948.255	Ti I	100	30	—	—	
2954.050	Fe II	—	3	—	Do	2950.93	Fe	2	—	—	—	2948.229	Os	12	5	—	—	
2954.022	Cb	1	5	—	—	2950.88	K II	—	5	—	Bn	2948.16	Cd	—	35	—	—	
2953.947	Mo	1	20	—	—	2950.878	Cb	150	200	—	—	2948.15	Tm	15	10	—	Me	
2953.940	Fe I	400 r	150	—	S	2950.847	Eu	4	—	—	—	2948.14	P	—	[5 h]	—	Gu	
2953.778	Fe II	5	80	—	—	2950.828	Re I	25	—	—	—	2948.092	U	10	12	—	—	
2953.774	Pd II	—	2 h	—	—	2950.766	Ir I	12	2	—	—	2948.075	V	2	70	—	—	
2953.709	Dy	2	1	—	—	2950.69	W	4	—	—	—	2948.01	Tm	15	20	—	Me	
2953.706	Er	4	—	—	—	2950.687	Cr	—	5	—	—	2947.876	Fe I	600 r	200	—	—	
2953.706	Cr	6	25	—	—	2950.679	Hf	15	12	—	—	2947.85	Cs	—	[2]	—	Bs	
2953.65	Hf II	5	1	—	Me	2950.536	Ru	30	4	—	—	2947.80	Ta	10	2	—	—	
2953.59	Tm	5	30	—	Me	2950.506	U	4	2	—	—	2947.742	Co	3	—	—	—	
2953.560	Ta	10	—	—	—	2950.498	Ce	2	—	—	—	2947.72	W	—	8	—	—	
2953.560	Mo	3	1	—	—	2950.492	La II	3	50	—	—	2947.719	Ti I	8	—	—	—	
2953.537	Pr	10	10	—	—	2950.482	Ir I	12	—	—	—	2947.658	Fe II	10	100	—	—	
2953.486	Fe	100	50	—	—	2950.442	Th	8	6	—	—	2947.497	Cr	—	25	—	—	
2953.358	Cr	4	50	—	—	2950.44	W	—	20	—	—	2947.453	Ni II	—	10	—	—	
2953.287	U	2	2	—	—	2950.4	Bi II	—	[3 h]	—	Cf	2947.441	Na II	6	[40]	—	Fr	
2953.28	Yt II	3	12 h	—	Me	2950.348	V II	25	100 r	—	—	2947.384	W	12	10	—	—	
2953.2	Cd	—	[5]	—	Es	2950.339	Dy	2	—	—	—	2947.377	Ta	1	2 h	—	—	
2953.189	Sm	12	4	—	—	2950.32	Yb	2	10	—	—	2947.367	Ir I	12	2	—	—	
2953.11	Ho	20	10	—	Ex	2950.304	Ce	12	—	—	—	2947.363	Fe	30	20	—	—	
2953.076	Ce	4	—	—	—	2950.243	Fe	700	300	—	—	2947.300	Eu	30	—	—	—	
2953.039	Dy	2	—	—	—	2950.21	Te	—	[10]	—	—	2947.297	Ne I	—	[150]	—	Ps	
2953.03	Yb	—	5	—	—	2950.21	Kr	—	[30 h]	—	Bl	2947.285	Mo	2	25	—	Dl	
2953.015	Ru	8	—	—	—	2950.070	Er	5	—	—	—	2947.27	F	—	[2 h]	—	Ad	
2953.008	Mn	10	—	—	—	2949.970	U	6 h	4 h	—	—	2947.25	Ca	—	2 h	—	—	
2952.99	Ta	30 h	100 h	—	—	2949.965	Ru	4	20	—	—	2947.221	Dy	2	1 h	—	—	
2952.883	U	2	2 h	—	—	2949.96	Ca	—	2	—	—	2947.194	Sm	8	3	—	—	
2952.732	Ir	10	—	—	—	2949.935	Th	8	6	—	—	2947.149	Ce	4	—	—	—	
2952.702	U	5	2	—	—	2949.904	V I	2 h	—	—	—	2947.13	Se II	—	[4]	—	Mz	
2952.692	Ru	—	10	—	—	2949.896	Os	5	4	—	—	2947.13	Fe	4	2	—	—	
2952.68	Eu	200 w	150	—	—	2949.880	Re I	20	—	—	—	2947.130	Hf II	15	15	—	—	
2952.574	Ir	2 h	—	—	—	2949.83	Zr	—	3 h	—	—	2947.113	Yb	—	2	—	—	
2952.528	Sm	8	3	—	—	2949.810	Os	8	5	—	—	2947.08	Hg II	—	[25]	—	Ps	
2952.527	Ne I	—	[5]	—	Ps	2949.800	Cs II	—	[2]	—	Ot	2947.062	Dy	2	—	—	—	
2952.498	Ru I	60	2	—	—	2949.77	Xe	—	[4 h]	—	Hu	2946.991	Ru I	60	12	—	—	
2952.48	Xe II	—	[2]	—	Hu	2949.762	Ir I	25	10	—	—	2946.981	W	20	18	—	—	

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2946.972	Ir I	20 h	10	-	-	2944.189	U	8	12	-	-	2941.55	I	-	-	[12]	Bl
2946.910	Ta	150	10	-	-	2944.184	Ru	12	-	-	-	2941.543	Cb	50	-	300	-
2946.898	Cb	3	30	-	-	2944.175	Ga	10	15 r	-	-	2941.492	V II	12	150 r	-	-
2946.859	Ce	4	-	-	-	2944.1	Cs	-	[2]	-	Bs	2941.48	Se	-	-	[15]	Bl
2946.842	Cr	5	30	-	-	2944.071	Er	12	-	-	-	2941.38	Xe	-	-	[4]	Hu
2946.84	Tm	10 d	30	Me	-	2943.989	Mo	-	3	-	-	2941.369	V II	40	300 r	-	-
2946.783	Dy	2	-	-	-	2943.987	Ce	6	-	-	-	2941.343	U	8	-	-	-
2946.75	Yb	1	8	-	-	2943.959	W	5	4	-	-	2941.343	Fe I	600	300	S	-
2946.72	Nd	-	10	-	-	2943.921	Ru	50	5	-	-	2941.245	W	8	4	-	-
2946.690	Mo	3	25	-	-	2943.914	Ni I	50 r	20	-	-	2941.222	Mo	2	40	-	-
2946.615	Er	8	5	-	-	2943.908	Mn	2	2	-	-	2941.197	Ce	5	-	-	-
2946.576	Re	10	-	-	-	2943.895	U	10	25	-	-	2941.179	Er	6	1	-	-
2946.527	V I	10	5	-	-	2943.89	Cd II	-	[5]	-	Vs	2941.11	V I	2	-	-	Kn
2946.514	W	5	-	-	-	2943.87	Ir	4 d	5 d	-	-	2941.090	Pt	2	-	-	-
2946.44	Pd II	-	2	-	-	2943.827	V I	7 h	-	-	-	2941.079	Ir I	20	5	-	-
2946.429	W	-	12	-	-	2943.786	Sm	8	2	-	-	2941.064	Dy	2	1	-	-
2946.422	Mo	10	6	-	-	2943.769	Ta	10	5	-	-	2941.050	In II	-	[80]	-	Ps
2946.420	Sm	6	-	-	-	2943.725	Ir	3 h	-	-	-	2941.041	Mn	25	1	-	-
2946.41	U	3	2	-	-	2943.673	Ce	8	-	-	-	2940.978	Mo	10	1	-	-
2946.382	Ce	8	-	-	-	2943.637	Ga I	10	20 r	-	-	2940.978	Cr	-	10	-	-
2946.316	Dy	2	-	-	-	2943.636	V	2	4	-	-	2940.953	Cs II	-	[8]	-	Ot
2946.29	Yb	3	15	-	-	2943.628	Ir	3 h	-	-	Ab	2940.95	Te	-	[5]	-	Bl
2946.283	U	4	4	-	-	2943.62	Sn II	-	2	-	-	2940.949	W	5	3	-	-
2946.265	Th	8	2	-	-	2943.57	Fe	12	6	-	-	2940.877	Ce	5	-	-	-
2946.261	Ta	10	2	-	-	2943.551	La II	2	6 hl	-	Me	2940.85	Cb	-	5	-	-
2946.17	Br	-	[2]	-	Bl	2943.500	Nd	3	5	-	-	2940.820	Eu	10	-	-	-
2946.116	Cb	4	20	-	-	2943.492	Sm	8	3	-	-	2940.785	Ce	15	-	-	-
2946.101	Ce	2	-	-	-	2943.484	Co I	30	-	-	-	2940.772	Hf I	60	12	-	-
2946.10	Fe	3	1	-	-	2943.481	Ru I	30	-	-	-	2940.663	Ce	4	-	-	-
2946.056	Ce	10	-	-	-	2943.41	Xe	-	[2]	-	Hu	2940.591	Fe	200	80	-	-
2946.009	Mo	20	40	-	-	2943.405	U	6	4	-	-	2940.542	Ir I	15	10	-	-
2945.95	Yt	2	100	-	-	2943.380	Mo	1	25	-	-	2940.51	Yb	3	25	-	-
2945.913	Nd	-	5	-	-	2943.380	Re I	15	-	-	-	2940.483	Mn	40 Wh	-	-	-
2945.90	Yb	10	60	-	-	2943.36	Tm	6	15	-	Me	2940.46	Eu	15	-	-	-
2945.895	Re	2	-	-	-	2943.326	W	7	6	-	-	2940.428	Ir I	5	-	-	-
2945.889	U	8	12	-	-	2943.260	Ir	4	-	-	-	2940.392	Mn	40 Wh	-	-	Fu
2945.883	Cb	2	100	-	-	2943.215	Ce	6	-	-	-	2940.367	U	6	12	-	-
2945.88	Fe	2	-	-	-	2943.20	Cl	-	[4]	-	An	2940.358	Ru I	50	3	-	-
2945.856	Ce	2	-	-	-	2943.196	V I	30	25 r	-	-	2940.340	Cr	8 hs	-	-	-
2945.83	Ho	3	70 h	Ex	-	2943.184	U	5	8	-	-	2940.225	Cr	-	30	-	-
2945.748	Cb	3	-	-	-	2943.151	Ir I	30	20	-	-	2940.215	Ta	150	50	-	-
2945.706	Re	3	-	-	-	2943.15	Co II	-	100 wh	-	-	2940.199	W II	4	18	-	-
2945.70	Tb	10	3	Ed	-	2943.144	Re I	60	-	-	-	2940.199	Mo	2	40	-	-
2945.70	Fe	10	5	-	-	2943.132	Mn	1	3	-	-	2940.101	Mo	2	40	-	-
2945.695	Na II	2	[20]	-	Fr	2943.13	Ti II	-	60 wh	-	-	2940.06	Ta	100 l	40 w	-	Ed
2945.67	W	4	1	-	-	2943.00	O	-	[5 h]	-	Mh	2940.03	Tb	10	3 h	-	-
2945.667	Ru	60	300	-	-	2942.90	A II	-	[100]	-	Rt	2940.022	Mo	3	-	-	-
2945.665	Mo	20	2	-	-	2942.88	O	-	[5 h]	-	Fl	2939.944	Ru I	30	3	-	-
2945.582	Ce	3	-	-	-	2942.862	Th	10 s	10	-	-	2939.904	Mn	12	-	-	-
2945.52	P	-	[5]	-	Gu	2942.853	U	6	6	-	-	2939.770	Ce	2	-	-	-
2945.47	Ti II	-	100 wh	-	-	2942.850	Mo	10	1	-	-	2939.769	Eu	3	-	-	-
2945.463	Zr II	4	-	-	-	2942.850	Os	30	8	-	-	2939.743	W II	2	12	-	-
2945.428	Mo	5	1	-	-	2942.848	Os	30	8	-	-	2939.72	Xe	-	[3]	-	Hu
2945.385	Ce	4	-	-	-	2942.82	Yb	1	5	-	-	2939.70	Kr II	-	[2]	-	Me
2945.303	Ti	2	-	-	-	2942.755	Pt I	20	3	-	-	2939.692	Ru	12	5	-	Me
2945.280	Er	15	-	-	-	2942.745	Mn	10	1	-	-	2939.618	La II	-	3 h	-	-
2945.262	Fe II	1	3	-	-	2942.7	K I	5 R	-	-	Fl	2939.614	Th	5	5	-	-
2945.104	He I	-	[100]	-	IMr	2942.634	Th	5	4	-	-	2939.538	Ce	12	-	-	-
2945.101	Ru	6	50	-	-	2942.63	Fe	10	5	-	-	2939.535	Nd	-	5	-	-
2945.055	Fe	100	30	-	-	2942.610	W II	2	10	-	-	2939.53	Yb	2	6	-	-
2945.04	Ti I	50 l	25 l	-	Fl	2942.445	W	8	3	-	-	2939.508	Fe II	3	30	-	-
2944.96	Te	-	[5]	-	Bl	2942.433	U	4	2	-	-	2939.5	K	-	[5]	-	MI
2944.87	Tb	5	-	-	Ed	2942.352	V I	80 r	20 h	-	-	2939.494	U	5	4	-	-
2944.821	Mo	2	50 h	-	-	2942.302	Pr	-	10	-	-	2939.47	Rh I	2	-	-	-
2944.773	Ce	4	-	-	-	2942.27	I	-	[20]	-	Bl	2939.45	Cr	6	20	-	-
2944.755	V I	2 h	-	-	-	2942.256	W II	2	10	-	-	2939.43	Pd II	-	2 h	-	-
2944.754	Pt I	15	2	-	-	2942.250	Ru	30	100	-	-	2939.36	In	-	10	-	Cx
2944.72	Eu	3	-	-	-	2942.222	Mo	-	3	-	-	2939.318	Ba	-	2 h	-	Sz
2944.711	Hf	20	1	-	-	2942.211	Er	8	1	-	-	2939.311	U	4	2	-	-
2944.644	Cb	4	2 h	-	-	2942.21	Cs	-	[8]	-	Bs	2939.310	Er	5	-	-	-
2944.637	U	2	-	-	-	2942.204	Os	8	5	-	-	2939.304	Mn	50	-	-	-
2944.61	Xe	-	[2 h]	-	Hu	2942.16	Te	-	[100 h]	-	Bl	2939.29	Ho	-	10	-	Ex
2944.571	V II	50	300 r	-	-	2942.139	W II	6	10	-	-	2939.28	Ta	200	40 h	-	-
2944.564	Dy	2	1 h	-	-	2942.137	Ta	150	40	-	-	2939.271	Ir I	20	15	-	-
2944.51	Fe	2	-	-	-	2942.120	U	8	12	-	-	2939.177	W	8	2	-	-
2944.50	Ho	10	20	Ex	-	2942.11	Mg I	20	2 h	-	-	2939.131	Ru I	12	-	-	-
2944.46	Yb	-	3	-	-	2942.10	Xe	-	[10 h]	-	Hu	2939.080	Fe I	80	20	-	-
2944.398	Fe II	70	600	-	-	2942.05	Ho	-	10	-	Ex	2939.043	W	9	4	-	-
2944.395	W	30	20	-	-	2942.03	Yb	1	6	-	-	2939.04	U	6	2	-	-
2944.346	Ce	18	-	-	-	2941.995	Ti I, II	100	150	-	-	2939.03	Hg	-	[10]	-	Ps
2944.321	Re	10	-	-	-	2941.919	U	15	30	-	-	2938.886	Mo	-	3	-	-
2944.287	Bi	5	4	-	-	2941.880	Cr I	12	25	-	-	2938.852	W II	1	9	-	-
2944.213	Mo	25	2	-	-	2941.75	Fe	2	-	-	-	2938.85	Cr	6 wh	-	-	-
2944.20	Zr II	2 h	3	-	-	2941.715	Fe	6	1	-	-	2938.816	Sm	6	2	-	-
2944.20	Cl	-	[4]	-	An	2941.70	Tb	3	10	-	Ed	2938.813	Pt	15	2	-	-
						2941.557	Re	15	-	-	-	2938.768	Mo	2	5	-	-

2938.7—2930.5 Å.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2938.757	Ir I	10	—	—	2935.949	Ta	2	5	—	2933.138	Ir I	20	5	—
2938.73	Fe	2	—	—	2935.92	Hg II	—	[2]	Ps	2933.104	Th	8	5	—
2938.71	In	—	10	Cx	2935.893	Sm	8	2	—	2933.063	Mn	80	15	—
2938.70	Ti II	—	100 wh	—	2935.874	V I	30	15 h	—	2933.061	Sm	3	—	—
2938.682	Co	3	—	—	2935.86	Xe	—	[30 h]	Hu	2933.056	Sr	4	6	—
2938.666	V I	12	2	—	2935.757	Ce	3	—	—	2933.05	Tb	10	—	Ex
2938.59	Mo	1	10	—	2935.75	W	—	10 d	—	2933.05	Ho	—	10	Ex
2938.564	Ta	10	—	—	2935.695	Mo	1	15	—	2932.982	W	2	6	—
2938.55	Ag II	200	200 wh	—	2935.656	Mn	20	—	—	2932.97	Tm	10	—	Me
2938.539	Ti	2	—	—	2935.621	W	8	2	—	2932.96	U	3	6	—
2938.538	Mg I	25	—	—	2935.615	U	3	4	—	2932.91	Tb	10	3 h	m
2938.5	Cs	—	[20]	Bs	2935.57	A II	—	[5]	Rt	2932.86	W	1	10	—
2938.499	W	8	6	—	2935.570	Ta	2	3	—	2932.84	Eu	4 d	—	—
2938.469	Ir I	18 h	12	—	2935.538	Cr	8	—	—	2932.721	Ne I	—	[75]	Ps
2938.426	Ta	50	3	—	2935.518	Ru	10	80	—	2932.705	Cr	2	25	—
2938.317	Ce	2	—	—	2935.413	Sm	2 h	—	—	2932.695	Ta	400	80 w	—
2938.300	Mo	1	30	—	2935.37	Hf	5	—	—	2932.662	Cb	1 h	80	—
2938.298	Bi I	300 w	300 w	—	2935.347	W II	5	10	—	2932.647	Th	8	3	—
2938.254	V I	2	60	—	2935.30	Ne II	—	[2]	Bn	2932.623	Ni	10	—	—
2938.220	Ce	5	—	—	2935.287	Cb	2	15	—	2932.624	In I	500	300	—
2938.18	Yb	1	3	—	2935.195	Mo	2	10	—	2932.61	U	10	25	—
2938.106	Th	5	4	—	2935.192	Ir I	12	—	—	2932.60	A II	—	[20]	Rt
2938.073	Cb	3	5	—	2935.165	Ta	20	2	—	2932.59	Tm	5	25	Me
2938.051	Co	5	—	—	2935.148	U	3	—	—	2932.523	Eu	6	3	—
2938.05	Fe	2	1	—	2935.139	Cr	8	40	—	2932.52	Th	—	25 wh	—
2937.956	Ir I	5	—	—	2935.10	Yb	3	15	—	2932.323	V	12	80	—
2937.924	Mn	25 Wh	—	—	2934.991	W	15	12	—	2932.310	Re	10	—	—
2937.90	Te	—	[15]	Bl	2934.976	Cb	2	2	—	2932.274	Ce	10	—	—
2937.814	Re	8	—	—	2934.9	bh B	100	—	L	2932.213	W	4	2	—
2937.811	Fe	300	150	—	2934.90	U	4	2	—	2932.19	Au I, II	8	40	—
2937.795	Hf II	50	100	—	2934.847	Ta	40	4	—	2932.189	Mo	—	15	—
2937.730	Zr II	1	2	—	2934.84	Pd II	—	10 h	—	2932.180	U	5 h	6 h	—
2937.725	Na II	6	[40]	Fr	2934.840	Mo	5	1	—	2932.15	Nd	—	5 h	—
2937.707	Cb	—	20 wh	Me	2934.80	Xe II	—	[2 h]	Hu	2932.13	Cb	—	50	—
2937.707	Ce	6	—	—	2934.79	Tb	5	10	—	2932.090	Ce	4	—	—
2937.687	V I	20 w	10	—	2934.76	V I	5 h	—	—	2932.060	Sm	6	—	—
2937.665	Mo	20	1	—	2934.648	V I	2	—	—	2932.037	W	4	1	—
2937.661	W	6 d	10	—	2934.642	Os	30	5	—	2931.98	Fe	5	3	—
2937.551	Ru	20	—	—	2934.638	Ir	15 wh	6	—	2931.941	Rh I	80	20	—
2937.487	Sm	12	5	—	2934.638	Er	4	1	—	2931.90	Zr II	—	5 h	—
2937.484	Ta	2	—	—	2934.610	Zr II	4	6	—	2931.891	U	8	8	—
2937.445	Th	5	5	—	2934.60	Cl II	—	[5]	Ks	2931.88	Te	—	[5]	Bl
2937.351	U	5	4	—	2934.529	Dy	2	1	—	2931.87	Cl	—	[8]	Jv
2937.342	Ru	20	—	—	2934.517	Er	15	1	—	2931.869	W	2	10	—
2937.333	Cb	2	15	—	2934.50	Ta	2	—	Ks	2931.857	V	2	15	—
2937.316	Ti I	35	5	—	2934.493	Cr	25 h	—	—	2931.830	Sr I	30	8	ISn
2937.260	Ir I	6	—	—	2934.493	Fe II	—	8	—	2931.81	Fe	10	6	—
2937.18	Yb	2	10	—	2934.42	U	3	2	—	2931.727	I	—	[20]	Ke
2937.151	U	3	2	—	2934.401	V II	10	50 h	—	2931.624	V	4	20	—
2937.141	W	8	12	—	2934.4	Ca	—	2 hs	Ad	2931.600	Fe	—	15	—
2937.040	V	2	25	—	2934.37	Fe I	7	3	—	2931.53	W	—	12 l	—
2937.00	I	—	[20]	Bl	2934.35	Yb	3	—	—	2931.53	Lu	7 h	—	Me
2936.93	Cr	4	18	—	2934.345	Ce	10	—	—	2931.521	U	3	2	—
2936.908	Ir	3 h	—	—	2934.32	Cr	—	6	—	2931.49	A	—	[20]	Rt
2936.905	Fe I	700 r	500 r	—	2934.299	Mo	30	50 h	—	2931.469	Cb	3	50	—
2936.895	Mg I	12	—	—	2934.23	Ag II	10	200 h	—	2931.462	Pd I	10	2	—
2936.781	Mo	2	25	—	2934.185	Ru	30	—	—	2931.43	Fe	10	3	—
2936.776	U	6	4	—	2934.18	Se II	—	[2]	Mz	2931.414	U	12	12	—
2936.77	Ho	—	1000 R	Ex	2934.15	Cd	—	[2]	Vs	2931.41	Tb	5	3 h	m
2936.77	Pd I	2	1	Sh	2934.141	Th	8	4	—	2931.280	Os	40	10	—
2936.77	Te	—	[5]	Bl	2934.09	I	—	[12]	Bl	2931.261	Ti II	—	150 wh	—
2936.72	Ca	—	4 h	Ed	2934.065	Na II	1	[5]	Fr	2931.14	Cd	—	[5 d]	Vs
2936.7	Bi II	—	[3]	Cf	2934.022	Mn	25	—	—	2931.11	Cs	—	[20]	Bs
2936.682	Ir I	15 h	5	—	2934.009	Re I	3	—	—	2931.081	Mo	15	1	—
2936.672	W	10	20	—	2934.003	Ir I	6	—	—	2931.060	Zr II	3 h	15 whl	—
2936.66	Cb	—	30	—	2933.970	Cr	2 h	40	—	2930.99	Ta	30 w	3 h	—
2936.625	Ir	40	—	Ab	2933.86	U	8	10	—	2930.913	Th	8	8	—
2936.537	Mg II	20	—	—	2933.835	V II	2	35	—	2930.87	V I	4 h	—	—
2936.498	Re	25	—	—	2933.81	Fe	3	1	—	2930.883	Na II	1	[2]	Fr
2936.469	Th	12	12	—	2933.79	Tb	5	3 h	m	2930.845	Cr	—	5	—
2936.457	Cb	1	2 h	—	2933.70	Ne II	—	[4]	Bn	2930.853	Cb	—	50	—
2936.453	U	12	20	—	2933.657	Ir I	2	—	—	2930.806	V II	30	150 r	—
2936.449	Fe	5	5	—	2933.57	U	2	2	—	2930.805	U	4	30 h	—
2936.308	Zr II	10	15	—	2933.550	Ta	400	150	—	2930.786	Pt	15	3 h	—
2936.258	Ru	10	—	—	2933.548	Ti I	4	8	—	2930.771	Mo	5	25	—
2936.194	Th	10	10	—	2933.548	Sm	3	2	—	2930.773	Yt II	8	12 h	—
2936.17	Ti II	—	100 wh	—	2933.529	Ce	6	—	—	2930.66	Fe	2	—	—
2936.16	Br	—	[5]	Bl	2933.442	Mn	4	—	—	2930.647	Fe	12	—	—
2936.156	Mn	10	—	—	2933.436	Re	2	—	—	2930.643	Cb	—	10	—
2936.105	Ir I	10	1	—	2933.43	Cr	5 h	—	Kn	2930.628	Ir	15	5	—
2936.024	Fe II	5	10	—	2933.31	U	3 h	—	—	2930.616	Re	50	—	—
2936.016	Ru	20	—	—	2933.27	In	—	3	Cx	2930.588	U	4 h	2 h	—
2936.002	W	10	3	—	2933.245	Ru	20	150	—	2930.57	Tm	2	10	Me
2936.0	Rn	—	[3]	Pe	2933.228	V I	2 h	—	—	2930.566	Os	15	4	—
2935.997	Tm	80	300	Me	2933.204	Mo	—	8	—	2930.51	W	2	5	—

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2930.503	Mo	25	50 h	-	2927.88	Fe	3	2	-	2925.148	La II	1 h	5 h	-
2930.43	Co II	-	150 wh	-	2927.864	Ce	3	-	-	2925.124	W	12	10	-
2930.430	U	8	12	-	2927.85	Yb	2	10	-	2925.113	Ir	2 h	10	-
2930.40	Kr II	-	[2 wh]	Me	2927.810	Gb	200	800 r	-	2925.091	I II	-	[12]	Ke
2930.400	Mo	5	-	-	2927.749	Sm	6	-	-	2925.076	Ru	10	-	-
2930.263	Cb	-	20 wh	-	2927.735	U	4	6 h	-	2925.050	Th	10 s	15 h	-
2930.247	Mn	25	-	-	2927.717	Er	7	1	-	2925.035	Eu	150 l	100	-
2930.191	Os	10	4	-	2927.716	Re	10	-	-	2924.984	W II	2	15	-
2930.18	I	-	[12]	Bl	2927.70	W	2	10	-	2924.908	V I	2 h	-	-
2930.176	Ir I	12	5	-	2927.670	Co I	50	1	-	2924.882	Cu I	2	-	-
2930.17	Te	-	[10]	Bl	2927.64	V I	7 h	4 h	-	2924.827	Cb	4	3	-
2930.16	Ca	-	2 h	Ad	2927.609	Sm	8	-	-	2924.792	Ir I	25 wh	15	-
2930.146	Ca	10	6	-	2927.58	Xe II	-	[2 h]	Hu	2924.785	Ta	15	2	-
2930.14	Yt II	8	20	-	2927.552	Fe	20	12	-	2924.74	I	-	[12]	Bl
2930.128	V	4	35	-	2927.548	Ce	5	-	-	2924.66	A	-	[20]	Rt
2930.08	Pr	3	5	-	2927.539	Mo	3	40	-	2924.654	Sm	6	-	-
2930.064	Mo	1	20	-	2927.536	Ru	50	200	-	2924.650	Ru	10	-	-
2929.99	W	5	3	-	2927.529	W	5	3	-	2924.644	V II	60	200 r	-
2929.930	Ru	12	-	-	2927.404	Re	125 w	-	-	2924.640	Zr II	4	4	-
2929.898	Hf	5	3	-	2927.376	U	12	10	-	2924.632	Mn	5	-	-
2929.88	La II	2	7	Me	2927.304	Pd II	-	10	-	2924.615	Hf	25	2	-
2929.848	Pd	-	2 h	-	2927.249	Ce	4	-	-	2924.600	Re I	40 W	-	-
2929.794	Pt I	800 R	200 w	-	2927.119	Ru	30	2	-	2924.580	U	10	10	-
2929.777	U	2	2	-	2927.109	Sm	10	1	-	2924.52	Al	-	[15]	Sy
2929.751	Ir	-	3 h	-	2927.081	Cr	2	80	-	2924.52	Tb	5	3 h	m
2929.734	Er	12	-	-	2927.08	In	-	2	-	2924.48	Cs	-	[2]	Bs
2929.71	Ca	-	4 h	Ad	2927.067	Dy	2	-	-	2924.437	Mn	12	-	-
2929.66	Xe	-	[2 wh]	Hu	2927.05	Fe	1	-	-	2924.38	Xe II	-	[3]	Hu
2929.626	Hf II	30	50	-	2927.015	Ir I	10	-	-	2924.35	Fe	6	3	-
2929.624	Fe I	50	10	-	2926.988	Zr II	15	30	-	2924.33	Ca	-	5	Ad
2929.536	Re	30	-	-	2926.982	W	10	12	-	2924.318	Mo	10	25	-
2929.509	Co I	75	-	-	2926.940	Re	10 w	-	-	2924.24	Yb	3	15	-
2929.507	Os	30	3	-	2926.93	Cd	-	[3]	Vs	2924.16	Tb	3	10 h	Ed
2929.497	Mo	-	5	-	2926.928	Ce	3	-	-	2924.09	Rh	3	3	-
2929.445	Cr	-	40	-	2926.826	W II	1	10	-	2924.025	V II	70 r	300 R	-
2929.442	Ru	20	-	-	2926.75	Ti II	-	50 wh	Ex	2924.024	Rh I	100	-	-
2929.44	Ca	-	2 h	-	2926.748	Tm	80	60	Me	2924.02	Te	-	[15]	Bl
2929.351	Ag II	20	40	-	2926.733	Mo	-	20	-	2924.01	Si	3	[5]	-
2929.312	Ne I	-	[15]	Ps	2926.657	Sm	8	-	-	2923.99	Fe	5	2	-
2929.285	Cd II	-	50	-	2926.646	Pb	2 h	-	Kl	2923.95	Xe	-	[3]	Hu
2929.24	Fe	3	1	-	2926.588	U	3	4	-	2923.94	Th	-	12 wh	-
2929.121	Fe	10	10	-	2926.587	Fe II	150	400	-	2923.90	La II	3	20	-
2929.119	U	8	6	-	2926.457	Ta	100	10	-	2923.88	Ru	-	30	-
2929.115	Zr II	2	2	-	2926.446	V	2	35	-	2923.852	Fe	100	70	-
2929.109	Ce	10	-	-	2926.42	W	5	-	-	2923.851	Ir I	10	5	-
2929.107	Rh	100	10	-	2926.349	Er	3 l	-	-	2923.851	Zr I	20	-	-
2929.009	Hf	15	-	-	2926.32	Hf II	10	2	-	2923.834	Ce	3	8 h	-
2929.008	Fe I	150	100	S	2926.256	V I	10	-	-	2923.83	Ba	-	3	Py
2928.93	Br	-	[2]	Bl	2926.22	Mo	-	40	-	2923.704	Cu	6	-	-
2928.814	Co I	50	1 h	-	2926.19	Eu	4 w	-	-	2923.684	Cr	1	25	-
2928.79	Ho	-	100	Ex	2926.159	Cr II	2	40	-	2923.67	I	-	[12]	Bl
2928.753	Fe I	5	-	-	2926.103	U	3	2	-	2923.661	Na II	2	[12]	-
2928.75	Mg II	25	100	-	2926.1	Bi II	-	[2]	Cf	2923.620	V I	50 r	150 r	-
2928.69	Ti	-	40 wh	Ex	2926.06	Hf	-	2	-	2923.542	W	10	5	-
2928.680	Mn	25	-	-	2926.01	Fe	2	1	-	2923.519	Ta	4 h	-	-
2928.67	Nd	-	5	-	2925.975	U	6	8	-	2923.505	U	8	12	-
2928.67	Th	-	12 wh	-	2925.925	Ce	8	-	-	2923.455	Ce	6	-	-
2928.662	W	8	7 h	-	2925.92	Tm	10	2	Me	2923.439	Fe	30	12	-
2928.648	Pt II	1	6 h	Sh	2925.900	Fe I	15	10	-	2923.439	Nd	-	5 h	-
2928.599	U	15	35	-	2925.874	V I	12	-	-	2923.397	V	2	2	-
2928.580	Re	6	-	-	2925.805	W	-	15 l	-	2923.391	Mo	30	30	-
2928.493	Mo	-	10	-	2925.791	Fe	15	6	-	2923.384	U	3	6	-
2928.492	Ru	30	10	-	2925.659	Ta	100	4	-	2923.371	Gd	2	2	-
2928.468	I	-	[12]	Ke	2925.65	Tm	20	60	Me	2923.341	V	4	20	-
2928.40	Er	4	1	-	2925.641	Ce	6	-	-	2923.290	Fe	50	35	-
2928.344	Ti I	40	6	-	2925.63	Ne II	-	[9]	Bn	2923.220	Mo	3	4	-
2928.301	Cr	6	15	-	2925.630	Zr II	1	2 h	-	2923.174	U	8	10	-
2928.29	Ho	-	10 h	Ex	2925.60	Cr	4 h	-	-	2923.17	Fe	3	1	-
2928.284	Er	15	2	-	2925.59	Th	-	10 h	-	2923.114	Ru	-	10	-
2928.259	Sm	3 wh	1	-	2925.57	Mn	150 Wh	1 Wh	-	2923.105	Rh I	40	-	-
2928.256	Th	12 s	-	-	2925.568	U	15	25	-	2923.098	W	12	10	-
2928.23	Tm	10	30	Me	2925.568	Os	40	10	-	2923.028	Cb	3	2	-
2928.23	Ca	8	2	-	2925.439	Cu I	9	-	-	2922.990	Th	5	4	-
2928.23	Te	-	[15]	Bl	2925.417	Pd II	-	2 wh	-	2922.924	Ti I	10	-	-
2928.21	Ti II	-	[10]	El	2925.406	Hg I	60	50	Cn	2922.880	Ce	3	-	-
2928.190	W	10	6	-	2925.405	Mo	5	30	-	2922.867	U	6	8	-
2928.149	Cr	6	20	-	2925.37	Te	-	[25]	Bl	2922.83	Tm	5	15	Me
2928.11	Nd	-	5 h	-	2925.363	Fe	70	50	-	2922.822	Sm	3	1	-
2928.107	Pt I	8	6	-	2925.320	Os	8	4	-	2922.801	Th	5	4	-
2928.105	Fe I	10	4	-	2925.288	V	2	20 h	-	2922.738	Mo	1	20	-
2928.04	In	-	2	Cx	2925.265	Ta	100 W	40 ws	-	2922.70	I	-	[12]	Bl
2927.933	W	7	6	-	2925.222	U	3	4	-	2922.635	U	6	6	-
2927.91	Cd II	-	8	-	2925.200	Re	25	-	-	2922.620	Fe	50	25	-
2927.9	K I	2 R	-	Fl	2925.193	Ta	100	5	-	2922.607	Th	8	10	-
2927.888	Ti II	-	5 wh	-	2925.185	Ce	10	-	-	2922.581	Ce	10	-	-

2922.5—2914.7 A.

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities				
		Arc	Spk	[Dis]	R			Arc	Spk	[Dis]	R			Arc	Spk	[Dis]	R	
2922.575	V I	6	1 h	-		2919.59	Ho	-	10	-	Ex	2917.151	Mo	-	20	-		
2922.492	Pd I	200	25	-		2919.554	Co I	30	-	-	-	2917.137	Ru	20	15	-		
2922.47	Cb	-	5 w	-		2919.49	W	-	10	-	-	2917.127	Ce	3	-	-		
2922.451	Cr	-	6	-		2919.411	Re	25	-	-	-	2917.120	Ta	10	3 h	-		
2922.415	Ta	10	1 h	-		2919.383	Mo	8	1	-	-	2917.094	Fe II	-	20	-		
2922.38	Fe I	10	4	-		2919.366	U	5	2	-	-	2917.082	U	2	2	-		
2922.370	Ce	8	-	-		2919.35	Yb	15	90	-	-	2917.052	Cb	10 w	100 r	-		
2922.331	Ru	-	40	-		2919.344	Pt I	150	40	-	-	2917.027	Ce	2	-	-		
2922.291	Ce	2	-	-		2919.32	Cb	-	5 h	-	-	2916.920	Fe II	-	3	-		
2922.222	U	2	2	-		2919.291	W	8	3	-	-	2916.863	Ta	2	3 h	-		
2922.22	Fe	3	1	-		2919.27	Er	12 d	7	-	-	2916.86	W II	-	7	-		
2922.21	Cs	-	[2]	Bs		2919.264	Sm	3	-	-	-	2916.787	W II	1	6	-		
2922.09	Tm	8	15	-	Me	2919.22	Se	-	[10]	Bl	-	2916.735	Nd	2	-	-		
2922.080	Ce	8	-	-		2919.21	Fe	15	10	-	-	2916.71	Ti II	-	5	-		
2922.058	U	8	8	-		2919.202	Mo	8	1	-	-	2916.706	U	6	8	-		
2922.024	Fe II	-	50	-		2919.189	Ir	3 h	10	-	-	2916.682	Ce	10	-	-		
2921.972	I II	-	[2]	Mu		2919.14	Ca	-	2	Ad	-	2916.635	Zr II	4	4	-		
2921.97	Te	-	[5]	Bl		2919.13	Cd	-	[3]	Vs	-	2916.52	Tm	15	40	-	Me	
2921.92	Kr	-	[4 whl]	Me		2919.124	Mn	12	-	-	-	2916.504	Cb	3	3	-		
2921.905	Mo	2	4	-		2919.07	Kr	-	[2 whl]	Me	-	2916.481	Hf I	50	15	-		
2921.903	W	4	8	-		2919.048	Yt	18	6	-	-	2916.467	In II	-	[10]	Ps		
2921.89	I II	-	[4]	Bl		2919.048	Na II	6	[40]	Fr	-	2916.465	U	8	10	-		
2921.83	Cs	-	[2]	Bs		2919.04	Fe	1	-	-	-	2916.440	Th	-	8 s	-		
2921.817	Cr II	4	60	-		2918.99	Tb	15	10	m	-	2916.43	Yb	1	10	-		
2921.727	U	6	6	-		2918.974	U	6	4	-	-	2916.40	O	-	[15]	Mh		
2921.71	Fe	4	2	-		2918.96	Ta	2	50	-	-	2916.384	W II	4	4	-		
2921.684	U	10	15	-		2918.917	Cb	10	10 h	-	-	2916.365	Ir I	25	2	-		
2921.625	Th	8	10	-		2918.878	Re	10	-	-	-	2916.354	Ru	-	35	-		
2921.60	Fe	3	1	-		2918.869	U	3	2	-	-	2916.322	Ta	5	1	-		
2921.54	O	-	[30]	Mh		2918.828	Mo	15	25 l	-	-	2916.300	U	5 h	2 h	-		
2921.52	Ti I	200 R	100 R	-	Fl	2918.824	Fe	15	8	-	-	2916.27	Hg II	-	[30]	Ps		
2921.484	Nd	-	5	-		2918.781	Ce	10	-	-	-	2916.26	Tb	5	10	-	m	
2921.422	Sm	4	2	-		2918.78	Ti II	-	10 wh	-	-	2916.255	Ru I	100	25	-		
2921.421	Ce	6	-	-		2918.683	U	5	10	-	-	2916.250	Zr I	6	-	-		
2921.383	Pt I	100	6	-		2918.670	Dy	2	1	-	-	2916.165	Cr I	18	15	-		
2921.371	Ce	6	-	-		2918.665	Ce	30 s	-	-	-	2916.153	Fe II	2 h	6	-		
2921.354	Cr	6	-	-		2918.631	W	8	20	-	-	2916.13	Se	-	[10]	Bl		
2921.314	Sm	6	1	-		2918.576	Hf	30	8	-	-	2916.108	W	5	4	-		
2921.27	Tm	5 d	10	-	Me	2918.568	Ir I	18	2	-	-	2916.10	Ti	-	50 wh	-		
2921.26	Nd	5 d	5	-		2918.56	Cb	-	10	-	-	2916.100	Mo	20	-	-		
2921.245	Cr	1	25	-		2918.498	Ru	-	60	-	-	2916.094	Cb	-	10	-		
2921.18	V I	7 h	-	-	Kn	2918.44	Gd	2	3	-	-	2916.038	Ta	2 h	-	-		
2921.156	Ru	8	-	-		2918.42	Ca	-	2 s	Ad	-	2916.019	V I	9	-	-		
2921.12	Yb	2	20	-		2918.37	Au II	-	25	-	-	2915.991	Zr II	25	20	-		
2921.119	Ir	-	2 h	-		2918.357	Fe	40	25	-	-	2915.861	V	1	30	-		
2921.115	W	10	10	-		2918.32	Ti I	400 R	200 R	Fl		2915.81	U	3	2	-		
2921.084	Th	4	3	-		2918.27	Tm	25	50	Me	-	2915.80	Ho	-	10	-	Ex	
2921.03	Cs	-	[20]	Bs		2918.250	W	12	8	-	-	2915.747	Ce	2	-	-		
2920.99	Fe	12	7	-		2918.240	Zr II	15	15	-	-	2915.73	I	-	[12]	Bl		
2920.956	Ru	30	30	-		2918.209	V	-	15 h	-	-	2915.67	Tm	3	7	-	Me	
2920.940	Na II	6	[20]	Fr		2918.16	Fe	3	2	-	-	2915.63	In	-	2	-		
2920.935	Th	5	5	-		2918.15	B II	-	2	Sy	-	2915.626	Er	18	2	-		
2920.828	Sm	6	-	-	Kn	2918.035	Ir I	12	-	-	-	2915.625	Ru	20	-	-		
2920.690	Fe I	150	80	-	I	2918.027	Fe	125	100	-	-	2915.62	Au	-	[5]	Rt		
2920.599	Sm	4	-	-		2917.932	V I	12	2 h	-	-	2915.59	Tb	10	10 h	-	m	
2920.482	Ce	6	-	-		2917.923	Dy	2	-	-	-	2915.586	W	9	8	-		
2920.47	Ca	-	5	-		2917.886	Ce	2	-	-	-	2915.555	Ce	10	-	-		
2920.386	U	8	6 h	-		2917.874	Fe	2	-	-	-	2915.537	U	5	6	-		
2920.385	V II	20	125 r	-		2917.827	Os	10	3	-	-	2915.52	Mg	20	12	-	m	
2920.372	Th	5	4	-		2917.8	Rn	-	[3]	Wo	-	2915.494	Ir	2 h	-	-		
2920.36	Pd II	-	4 wh	Bx		2917.79	Th	4	6	-	-	2915.492	Ta	150	40	-		
2920.322	Ta	2	-	-		2917.774	Ru	60	2	-	-	2915.419	Rh I	80	40	-		
2920.292	Ce	2	-	-		2917.770	Ir I	10	-	-	-	2915.408	Cb	1	10	-		
2920.29	Fe I	2	1	-		2917.733	I	-	[15]	Ke	-	2915.380	Mo	10	1	-		
2920.263	Mo	1	10	-		2917.686	Ce	2	-	-	-	2915.337	Ta	150 w	50	-		
2920.257	Ru	30	-	-		2917.666	W	8	1	-	-	2915.331	V I	12	20	-		
2920.243	Er	10	-	-		2917.624	Nd	2 h	5 h	-	-	2915.33	Tb	10	10	-	Ex	
2920.177	U	3	6	-		2917.623	Sm	10	10	-	-	2915.30	Cl	-	[5]	Jv		
2920.15	Fe	2	1	-		2917.554	V	4	-	-	-	2915.27	Yb	10	40	-		
2920.04	Ag II	-	100 wh	-		2917.516	Na II	8	[40]	Fr	-	2915.256	Mo	6	-	-		
2919.992	V II	10	70 r	-		2917.491	Ce	3	-	-	-	2915.252	Ce	2	-	-		
2919.96	Te	-	[50]	Bl		2917.49	Hf II	10	8 h	-	-	2915.24	Cs	-	[2]	Bs		
2919.87	Xe II	-	[25]	Hu		2917.470	Fe II	2	25	-	-	2915.232	Cr	1	25	-		
2919.858	Ce	12	-	-		2917.46	Eu	15	-	-	-	2915.110	W	5	4	-		
2919.847	Fe	80	35	-		2917.408	Ce	6	-	-	-	2914.936	Ta	20	3	-		
2919.845	Na II	-	[5]	Fr		2917.39	Th	25 d	6	-	-	2914.933	Ce	2	-	-		
2919.842	Th	10	10	-		2917.385	W II	1	3	-	-	2914.926	V I	60	50 r	-		
2919.82	Sn II	-	[30]	Mo		2917.376	Sm	2	1 h	-	-	2914.89	Se	-	[15]	Bl		
2919.794	Os	100	15	-		2917.366	V II	10	20	-	-	2914.835	U	5	6	-		
2919.786	Ir	3	5	-		2917.298	W	7	3	-	-	2914.83	Tm	10	-	-	Me	
2919.695	W	5 d	2	-		2917.258	Os	40	20	-	-	2914.79	Tb	15	10 h	-	m	
2919.692	U	2	-	-		2917.252	Eu	2	-	-	-	2914.75	Ca	-	2	-	Ad	
2919.62	V	1	4 h	-		2917.23	Br	-	[15]	Bl	-	2914.747	Ce	2	-	-		
2919.608	Ru	80	12	-		2917.229	Ir I	2 h	-	-	-	2914.710	Os	10	6	-		
2919.594	Hf II	40	80	-		2917.226	V	1	9	-	-	2914.709	Sm	8	3	-		

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
2914.69	Cd II	-	[45]	Vs	2912.564	Sm	15	-	Kn	2910.27	Xe	-	[2 wh]	Hu
2914.667	Er	4	-	-	2912.501	V	1	20 h	Me	2910.269	Sm	12	3	-
2914.652	Ca II	-	[8]	Ot	2912.487	Ti I	3	-	-	2910.248	Zr II	3	4	-
2914.645	W II	-	10	-	2912.435	Ru I	30	3	-	2910.242	Mn	5	-	-
2914.629	U	12	15	-	2912.34	Eu	3 w	5 w	-	2910.213	Ce	5	-	-
2914.603	Mn	150 Wh	-	-	2912.334	Os	50	50	-	2910.201	U	3	2	-
2914.513	Pr	-	10	-	2912.257	Fe I	8	4	-	2910.193	Th	-	10 wh	-
2914.5	Pb II	-	[10]	Ea	2912.256	Pt I	300	25	-	2910.171	Rh	50	12	-
2914.499	Nd	-	15	-	2912.243	W	7	3	-	2910.10	Ne II	-	[18]	Bn
2914.48	Yb	-	4	-	2912.158	Fe I	150	150	S	2910.084	Re I	15	-	-
2914.431	V I	2	-	-	2912.12	Eu	5	-	Kn	2910.019	V II	35	150 r	-
2914.43	Eu	3	-	-	2912.082	Ti I	35	15	-	2909.943	Ir I	7	-	-
2914.428	Mo	1	5	-	2912.06	Cl II	-	[15]	Ks	2909.925	Ti II	7	15	-
2914.347	Ce	6	-	-	2912.04	P II	-	[5]	Gu	2909.914	Hf II	30	20	-
2914.314	Mo	-	10	-	2912.012	Th	8	6	-	2909.86	Fe	4	1	-
2914.306	Fe I	50	25	-	2911.915	Mo	30	50 h	-	2909.818	Re	40	-	-
2914.301	V I	7	35	-	2911.87	Tm	4	6	Me	2909.789	Ir	2	-	-
2914.299	Ru	50	-	-	2911.86	Sb	-	[5]	Lg	2909.742	U	4	4	-
2914.253	U	18	25	-	2911.85	O II	-	[7 h]	Mh	2909.740	Ru	-	150	-
2914.25	W	1	12	-	2911.81	Tb	5	3 h	m	2909.669	Os	12	5	-
2914.25	Nd	5 d	-	-	2911.765	Mo	5	-	-	2909.631	La	2	-	-
2914.21	Yb	10	60	-	2911.764	U	3	2	-	2909.628	W	4	3	-
2914.20	Fe	10	5	-	2911.745	Cb	8	100	-	2909.614	Ce	5	-	-
2914.127	Pt	1	10	-	2911.712	Sm	6	1	-	2909.59	Fe	2	-	-
2914.125	Ta	200	30	-	2911.70	Pr	-	15	-	2909.577	Er	7	1	-
2914.105	Ce	2	-	-	2911.682	Cr	-	40	-	2909.558	Ir	18	5	-
2914.007	Ni I	20	-	-	2911.655	V	1	10	-	2909.503	Fe	70	35	-
2913.987	Rh I	20	-	-	2911.65	Ca	-	2	Ad	2909.48	Yb	2	8	-
2913.968	Ru	-	50	-	2911.64	Cd II	-	[15]	Vs	2909.46	Ti II	-	4 h	-
2913.963	U	14	4	-	2911.548	U	12	6 h	-	2909.42	Ho	40	10	Ex
2913.96	Tm	15	-	Me	2911.52	Yb	5	40	-	2909.36	Hg II	-	[25]	Ps
2913.952	Dy	2	1	-	2911.514	Ce	8	-	-	2909.325	Dy	2	2	-
2913.844	Os	30	8	-	2911.461	Ne I	-	[25]	Ps	2909.31	Fe	4	2	-
2913.808	Mo	1	50 w	-	2911.45	In	30	3	Cx	2909.250	U	6	15	-
2913.804	Mn	5	-	-	2911.417	Er	30	15	-	2909.224	Ru	12	2	-
2913.802	Re	2	-	-	2911.39	Lu	100	300	Me	2909.19	Yb	2	7	-
2913.746	W II	4	10	-	2911.35	Te	-	[10]	Bl	2909.123	W	8	8	-
2913.738	Ce	5	-	-	2911.341	Os	5	5	-	2909.116	Mo II	25	40 h	-
2913.727	Cr	60 r	5	-	2911.324	Th	8	6	-	2909.061	Os I	500 R	400	-
2913.719	V	-	12	-	2911.287	U	3	2	-	2909.052	Cr I	60 r	12	-
2913.68	Ca	-	2	Ad	2911.272	Sm	15	1 h	-	2909.01	Eu	40	-	-
2913.61	La II	-	2	-	2911.231	Re I	8	-	-	2908.98	Nd	-	5 h	-
2913.593	Rh I	6	-	-	2911.215	Cu I	2 h	-	-	2908.979	Cb	1	5	-
2913.586	Ni II	-	20	-	2911.20	O II	-	[5 h]	Mh	2908.910	Ta	150	10	-
2913.542	Sn	100 wh	125 wh	Ar	2911.145	Cr I	40	8	-	2908.881	Cb	2	20	-
2913.542	Pt I	300	25	-	2911.120	Ce	2	-	-	2908.879	Mn	10	-	-
2913.54	Au II	-	50	-	2911.104	U	6	4	-	2908.878	U	2	2	-
2913.528	Ce	8	-	-	2911.08	Fe	3	-	-	2908.877	Ru	-	8	-
2913.519	Mo	20	1	-	2911.07	Se	-	[5]	Bl	2908.859	Fe	80	40	-
2913.440	U	6	12	-	2911.069	Er	4 s	-	-	2908.858	Hf II	3	5	-
2913.41	Tb	3	-	Ex	2911.064	V II	30	200 r	-	2908.817	V II	70 r	400 R	-
2913.362	Ce	5	-	-	2911.03	Pd II	-	2 wh	Bx	2908.74	Cd I	5 l	-	Fl
2913.33	Ti	-	50 wh	-	2911.01	Fe	3	-	-	2908.69	Tm	5	10	Me
2913.317	Ta	15 W	2	-	2911.001	W	10	8	-	2908.62	Kr II	-	[5]	Me
2913.271	Sb	-	4	Sp	2910.94	Br	-	[5]	Bl	2908.598	Nd	-	5	-
2913.249	Pt I	25	-	-	2910.933	Mo	-	10	-	2908.535	Er	6	-	-
2913.23	Kr II	-	[4]	Me	2910.92	Fe	10	4	-	2908.493	W	-	10	-
2913.219	Hf II	3	3 h	-	2910.902	Cr I	60 r	8	-	2908.49	Tb	3	20	Ex
2913.195	Ce	4	-	-	2910.852	Ce	2	-	-	2908.438	V	2	20	-
2913.170	Ru	50	3	-	2910.824	U	12	8	-	2908.421	Ce	30 s	-	-
2913.168	Ne I	-	[150]	Ps	2910.82	Cs	-	[2]	Bs	2908.410	U	8	8	-
2913.157	Re	20	-	-	2910.82	C II	-	2	En	2908.395	W	7	2	-
2913.110	Mn	2 h	2	-	2910.8	Cd	-	[30]	Es	2908.36	Te	-	[5]	Bl
2913.109	Ti II	3	5	-	2910.77	Ga II	-	[3]	Sy	2908.359	Th	12 s	12	-
2913.048	V	-	7	-	2910.77	Ti II	-	6 wh	-	2908.343	Re	20	-	-
2913.03	Sc II	2 h	5	-	2910.759	Fe II	-	2	-	2908.33	Yb	1	5	-
2912.960	U	5	6	-	2910.708	Pd	-	2 wh	-	2908.275	U	12	30	-
2912.906	Ce	12	-	-	2910.686	Cb	2	5	-	2908.261	W	7	3	-
2912.86	Yb	-	3	-	2910.67	Fe	4	-	-	2908.243	Cb	20 r	200	-
2912.8	P II	-	[5]	Dj	2910.653	Cr	-	50	-	2908.164	Mo	5	8	-
2912.80	Sn II	-	[3]	Mc	2910.638	U	4	-	-	2908.14	Ti	-	25 wh	-
2912.775	Hf II	3	2	-	2910.597	Th	12 s	10	-	2908.140	Nd	-	5	-
2912.769	Ce	12	-	-	2910.587	Cb	10	100	-	2908.097	Ce	3	-	-
2912.760	Th	5	5	-	2910.526	Gd	8	4	-	2908.09	Yb	-	4	-
2912.752	U	4	8	-	2910.52	In	-	5	Cx	2908.026	Os	5	3	-
2912.75	W	3	-	-	2910.477	W	12	10	-	2907.993	Mn	20	-	-
2912.749	Ru	2	18	-	2910.448	Pt I	3	-	-	2907.93	In	-	2	Cx
2912.70	Lu	15 h	-	Me	2910.44	Ne	-	[4]	Bl	2907.90	Ca	-	5	Ad
2912.68	Xe	-	[3]	Hu	2910.39	P	-	[5 h]	Gu	2907.899	Pt I	15	4	-
2912.664	Th	5	5	-	2910.389	V II	35	150 r	-	2907.857	Fe II	2	20	-
2912.66	Cd II	-	2	-	2910.385	Ce	3	-	-	2907.819	Ce	4	-	-
2912.616	Rh I	50	20	-	2910.36	Tb	3	10 h	Ed	2907.784	Mo	6	-	-
2912.584	Re	4	-	-	2910.357	Er	20	6	-	2907.783	Ta	3	-	-
2912.581	U	8	8	-	2910.35	Ho	-	10	Ex	2907.70	Br	-	[5]	Bl
2912.570	W II	1	10	-	2910.31	Ca	-	5 d	Ad	2907.573	U	2	2	-

2907.6—2899.6 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2907.520	Fe I	100	80	-	2905.10	Xe II	-	[2 h]	Hu	2902.401	Mn	12	-	-
2907.520	Cb	-	15 h	-	2905.07	Se II	-	[7]	Bl	2902.385	Ce	2	-	-
2907.471	V II	40	150 h	-	2905.00	O II	-	[5 h]	Fl	2902.323	Ce	3	-	-
2907.462	Ce	2	-	-	2904.986	V	2	25	-	2902.317	Fe II	-	2	-
2907.460	Co	4	-	-	2904.914	Na II	20	[80]	Fr	2902.317	Ir I	4	-	-
2907.459	Ni I	40	-	-	2904.86	Cb	-	10	-	2902.26	Zn II	-	[50]	Vs
2907.384	Zr II	2	3	-	2904.799	Ir I	25	10	-	2902.243	Mo	5	-	-
2907.260	W	8	3	-	2904.778	W	9	9	-	2902.23	Zr II	1	2	-
2907.235	Ir I	25	10	-	2904.751	Hf	30	6	-	2902.205	Mn	50	-	-
2907.216	Mn	50	-	-	2904.71	Gd	-	30	-	2902.198	W	9	10	-
2907.209	Rh I	100	30	-	2904.681	Cr	20	2	-	2902.147	Ce	8	-	-
2907.18	Xe II	-	[40 h]	Hu	2904.68	Dy	2	-	-	2902.098	Ru	6	-	-
2907.18	Yt II	-	4 h	-	2904.6	Rn	-	[3]	Wo	2902.08	Al II	-	[8]	Sy
2907.17	Tm	5	10	Me	2904.60	Fe	1	-	-	2902.07	Ag II	5	200 wh	-
2907.116	Mo	10	30	-	2904.54	W	-	7	-	2902.046	Ta	1000 w	200	-
2907.105	Re	15	-	-	2904.519	Hf II	8	8	-	2902.039	W	8	2	-
2907.093	Ce	4	-	-	2904.506	U	8	8	-	2902.009	Ru	-	25	-
2907.08	In	-	2	Cx	2904.467	Er	25	5	-	2901.951	Ir I	25	15	-
2907.06	Au	-	25	-	2904.430	Ta	15	3	-	2901.94	Ti II	2	5	-
2906.98	Te	-	[15]	Bl	2904.408	Hf I	30	6	-	2901.937	Ru	12	5	-
2906.97	Fe	2	-	-	2904.333	Mo	-	10	-	2901.92	Br	-	[5]	Bl
2906.913	U	18 r	15 h	-	2904.302	Nd	-	10	-	2901.915	Fe	125	40	-
2906.87	Yb	-	3	-	2904.29	O II	-	[5 h]	Mh	2901.84	I	-	[12]	Bl
2906.85	Ne II	-	[10]	Bl	2904.288	Co I	2	-	-	2901.819	Zr II	4	4	-
2906.795	Cb	-	6 wh	-	2904.274	Zr II	2	2	-	2901.81	Fe	3	2	-
2906.798	U	15	50	-	2904.254	Th	-	5	-	2901.794	Mo	-	15	-
2906.731	W	6	2	-	2904.212	Eu	10	-	-	2901.784	W	9	7	-
2906.71	Se	-	[10]	Bl	2904.18	Xe	-	[2]	Hu	2901.780	Ru	4	-	-
2906.68	Ti	-	100 wh	-	2904.18	Rb	-	[2]	Ok	2901.708	Ce	2	-	-
2906.676	Eu	300 W	300	-	2904.163	Fe	15	8	-	2901.642	U	5	6	-
2906.62	O II	-	[15 h]	Mh	2904.160	Cb	-	4	-	2901.617	Zr II	3	5	-
2906.61	Fe	2 h	1	-	2904.15	Br	-	[5]	Bl	2901.545	Ce	3	-	-
2906.603	I	-	[12]	Ke	2904.126	V	20	6 h	-	2901.54	Tb	10	3	m
2906.576	W	6	2	-	2904.08	Fe	6	3	-	2901.481	Yt I	5	-	-
2906.500	Er	6	-	-	2904.074	Ta	300 w	40	-	2901.409	Ru	-	8	-
2906.48	Ta	2 h	-	-	2904.072	W II	3	18	-	2901.385	Fe I	100	80	-
2906.457	V II	40	150 h	-	2904.05	Te	-	[5]	Bl	2901.381	Na II	3	[20]	-
2906.44	Nd	-	10	-	2904.01	Si	-	[5]	Sy	2901.322	Os	10	4	-
2906.432	U	2	2	-	2903.873	Ir I	8	-	-	2901.225	U	12	10	-
2906.421	Fe	60	25	-	2903.76	Fe	2	-	-	2901.17	W	-	9	-
2906.410	W	-	10	-	2903.745	Ir I	8	-	-	2901.1	Cs	-	[2]	Bs
2906.394	Dy	2	1	-	2903.74	Al II	-	[2]	Sy	2901.051	Ta	100	3	-
2906.34	Yb	-	40	Me	2903.72	Rb	-	[10]	Ok	2901.002	Ir I	5	-	-
2906.315	Ru	30	5	-	2903.698	V I	15	1	-	2900.888	V	2 h	-	-
2906.25	Cl II	-	[20]	Ks	2903.654	Cb	5	3	-	2900.83	Ho	-	10	Ex
2906.17	Cs	-	[2]	Bs	2903.64	Zr II	1	20 wh	-	2900.825	Dy	2	-	-
2906.17	Ta	2	-	Ks	2903.571	Nd	-	10	-	2900.807	W	8	3	-
2906.156	Ir I	3	-	-	2903.577	Hf	1	2	-	2900.795	Mo	2	40	-
2906.134	V I	30	25 h	-	2903.554	U	3	4	-	2900.750	Ta	3 h	100 l	-
2906.126	Th	8	4	-	2903.547	V	-	9	Me	2900.675	Cb	-	100 wh	-
2906.122	Fe II	-	40	-	2903.519	Ce	3	-	-	2900.606	Ce	6	-	-
2906.088	Ce	3	-	-	2903.496	W	-	15	-	2900.56	In	-	12	Cx
2906.056	Mo	15	1	-	2903.443	Er	4	-	-	2900.547	Mn	50	-	-
2906.032	Ce	2	-	-	2903.36	Fe	2	-	-	2900.52	Te	-	[10]	Bl
2906.018	Re I	30	-	-	2903.31	Rh I	2	-	-	2900.516	W	8	7	-
2905.970	Os	12	8	-	2903.30	O	-	[15 h]	Mh	2900.454	U	5	2	-
2905.934	Ta	6	5 h	-	2903.21	Tb	15	3 h	m	2900.421	Ru	-	50	-
2905.902	Pt I	100	15	-	2903.195	Co	25	1	-	2900.389	Ir I	20	5	-
2905.90	Au I, II	10	30	-	2903.19	Al II	-	[3]	Sy	2900.368	Ce	6	-	-
2905.88	Se	-	[5]	Bl	2903.188	Ti I	2	-	-	2900.363	Ta	200	40	-
2905.88	Br	-	[5]	Bl	2903.170	Th	6	5	-	2900.30	Lu	50	150	Me
2905.833	Mo	-	15	-	2903.13	Cd I	5 h	-	Fl	2900.265	Cr I	18	-	-
2905.828	Ru	20	5	-	2903.119	Os	8	5	-	2900.25	Pd	-	2 wh	Bx
2905.812	U	6	6 h	-	2903.08	Tm	15	25	Me	2900.22	I	-	[12]	Bl
2905.739	Ta	40	3	-	2903.079	Ru	6	2	-	2900.163	Mn	12	3	-
2905.730	Os	40	8	-	2903.078	V II	35	150 r	-	2900.16	Br	-	[3]	Bl
2905.660	Ti	30	2	-	2903.069	Mo	20	100 h	-	2900.114	U	6	8	-
2905.650	Ru I	50	12	-	2903.05	Lu	20	1	Me	2900.01	Tb	-	10	Ex
2905.638	Ir	20	4	-	2903.048	U	4	4	-	2899.96	W	-	5 h	-
2905.602	V	4	20	-	2903.013	I	-	[12]	Ke	2899.955	Rh I	70	30	-
2905.596	W	3	10	-	2902.951	Ir I	3	-	-	2899.938	V	-	12	-
2905.59	Si	-	[5]	Sy	2902.92	Yb	-	6	-	2899.85	Nd	-	10	-
2905.582	Re I	50	-	-	2902.86	Fe	2	-	-	2899.817	Co I	25	1	-
2905.52	La II	2	4 hl	-	2902.860	Ru	4	-	-	2899.80	La II	2	4 hl	-
2905.487	Cr I	60 r	8	-	2902.808	U	6	2	-	2899.78	Ca	-	8	Ad
2905.41	Tm	10	5	Me	2902.715	Ce	3	-	-	2899.727	Ru	5	1	-
2905.396	Re	20	-	-	2902.664	Ce	5	-	-	2899.724	Th	15	12	-
2905.38	Fe	7	4	-	2902.66	Nd	-	5	-	2899.71	Yb	2	10	-
2905.313	Gd	20	20	-	2902.632	Ta	30	2	-	2899.7	Ca	-	[2]	Bs
2905.28	U	3	2	-	2902.622	Mo	5	-	-	2899.69	Rh I	5 r	-	-
2905.266	Mo	30	4	-	2902.606	W	6	10	-	2899.66	Li	-	60	An
2905.239	Ta	80	100	-	2902.481	Re I	125 W	-	-	2899.645	Pt II	2 h	25 h	-
2905.226	Zr II	10	10	-	2902.469	Fe II	1	35	-	2899.629	Ir I	25	5	-
2905.178	W	9	3	-	2902.41	Yb	-	2	-	2899.620	Ce	2	-	-
2905.16	In	-	2	Cx	2902.406	U	6	6	-	2899.60	Nd	-	10	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2899.597	V I	30	4 h	—		2897.071	Th	12	5	—		2894.505	Fe	150	150	1	
2899.599	U	6 rh	4 h	—		2897.065	Mn	5	2	—		2894.48	Th	10	10	Ed	
2899.56	W	—	4 h	—		2897.03	Ne II	—	—	[5]	Bl	2894.47	Tm	20	40	Me	
2899.52	Si	—	[5]	Sy		2897.002	Cb	2	3	—		2894.451	Mo	50	80 h	—	
2899.488	Ru	—	8	—		2897.00	Cl	—	—	[6]	An	2894.425	Cb	1	20	—	
2899.483	Cr	2	40	—		2896.98	Nd	—	5 h	—		2894.326	Re	20	—	—	
2899.446	Ce	3	—	—		2896.971	Mo	3 h	1	—		2894.296	Ce	4	—	—	
2899.415	Fe	125	100	I		2896.965	U	6	6 h	—		2894.253	W	8	3	—	
2899.373	Th	5	3	—		2896.960	Er	15	3	—		2894.25	Cr II	—	25	—	
2899.239	Cb	20	500	—		2896.960	Ir I	5	—	—		2894.216	Ce	10	—	—	
2899.208	Cr I	50	25	—		2896.96	Fe	3	—	—		2894.171	Cr	40	2	—	
2899.201	V I	30	7 h	—		2896.915	W	4	2	—		2894.141	U	12	15	—	
2899.073	Ce	—	5 l	—		2896.90	Yb	2	5	—		2894.12	Nd	—	5	—	
2899.044	Ta	200	15	—		2896.878	V	—	9	—		2894.086	Ce	8	—	—	
2898.944	Ce	6	—	—		2896.862	Ce	5	—	—		2894.023	Ce	8	—	—	
2898.942	Ir I	8	—	—		2896.753	Cr I	60 r	30	—		2894.009	Hf II	2	2	—	
2898.94	Yt II	8	10	—		2896.75	A	—	[20]	Rt		2893.98	A	—	[2]	Rt	
2898.93	Th	—	25 wh	—		2896.733	Ce	20 s	—	—		2893.946	Na II	8	[60]	Fr	
2898.93	Fe	2	—	—		2896.71	Th	—	20 Wd	—		2893.907	Er	12	1	—	
2898.86	Fe	7	4	—		2896.69	Fe	3	—	—		2893.884	Fe I	25	20	—	
2898.84	Tb	15	10	m		2896.678	U	8	8	—		2893.865	Pt I	500	25	—	
2898.817	V I	10	—	—		2896.574	Er	5	—	—		2893.85	Eu	150	100	—	
2898.787	Fe	15	—	—		2896.530	Ru	30	4	—		2893.81	Cs	—	[2]	Bs	
2898.735	Fe II	—	3	—		2896.49	Ag II	2	150 wh	—		2893.792	Ta	2	10 h	—	
2898.712	Zr II	7	7	—		2896.461	Cr	6	30	—		2893.778	Mo	—	3	—	
2898.711	U	8	4	—		2896.448	Re	8	—	—		2893.764	Fe I	15	8	—	
2898.71	As I	25 r	40	Me		2896.446	W	15	25	—		2893.756	U	3	2	—	
2898.709	Hf II	25	50	—		2896.444	Mo	1	20	—		2893.74	Cd II	—	[3]	Tk	
2898.693	Mn	12	3	—		2896.438	Ta	2 h	50	—		2893.730	Ru	2	—	—	
2898.652	Mo	20	6	—		2896.404	Ce	8	—	—		2893.70	O	—	[10 h]	Mh	
2898.563	U	8	4	—		2896.40	Fe	2	—	—		2893.682	Ir I	10	—	—	
2898.538	Ru	20	4	—		2896.248	Cb	2	1	—		2893.63	Yb	1	8	—	
2898.536	Cr	12	40	—		2896.211	V II	35	150 r	—		2893.617	W	7	3	—	
2898.481	Mo	—	15	—		2896.090	Sn	2	2 h	—		2893.595	Hg I	40	50	—	
2898.47	Fe	2	—	—		2896.08	Rh	2	10	—		2893.50	U	5	1	—	
2898.45	Cl	—	[8]	An		2896.074	U	6	4	—		2893.496	Er	4	—	—	
2898.425	Ta	30	5	—		2896.063	Os	40	8	—		2893.486	Cr	—	5 h	—	
2898.386	Mo	2	—	—		2896.016	Re I	125 w	—	—		2893.44	Br	—	[35]	Bl	
2898.366	U	4	4	—		2896.008	W	10	12	—		2893.43	Fe	1 h	—	—	
2898.355	Fe	100	30	—		2895.949	Ce	4	—	—		2893.42	Au	—	30	—	
2898.350	Ir I	10	—	—		2895.927	Er	4	—	—		2893.331	U	2 h	2 h	—	
2898.336	Ce	6	—	—		2895.900	U	2	2	—		2893.320	V II	50	300 r	—	
2898.33	Yb	—	10	—		2895.891	Co I	3	—	—		2893.28	Cd	—	[2]	Vs	
2898.27	Be I	20	—	Ps		2895.88	Se II	—	[25]	Bl		2893.27	Te	—	[30]	Bl	
2898.267	Th	4	3	—		2895.657	Re I	25	—	—		2893.254	Cr I	80 r	10	—	
2898.259	Hf I	50	12	—		2895.639	Ce	8	—	—		2893.226	Mo	10	1	—	
2898.256	Zr	4	—	—		2895.605	V	1	12	—		2893.220	Pt I	25	5	—	
2898.253	W	8	3	—		2895.545	U	6	4	—		2893.123	W	8	4	—	
2898.219	Ru	—	60	—		2895.49	Te	—	[300 h]	Bl		2893.089	Pd II	—	100	—	
2898.20	Tb	—	10	Ex		2895.485	Co I	20	—	—		2893.071	La II	6	60	—	
2898.19	Be I	15	—	Ps		2895.45	W	—	9	—		2893.069	Cb	—	100 W	—	
2898.09	W II	—	3	—		2895.436	U	5	4	—		2893.056	Ce	2	—	—	
2898.06	Fe	2	—	—		2895.41	Ti I	30 s	15 s	Fl		2893.03	Eu	40	—	—	
2898.013	U	6	6	—		2895.364	Cb	1	10	—		2892.953	Cr	2	20	—	
2897.990	Mn	15	—	—		2895.336	Co	4	—	—		2892.93	Br	—	[5]	Bl	
2897.975	Bi I	500 WR	500 WR	—		2895.328	Zr II	—	10 h	—		2892.905	Bi	12 Wh	8	Om	
2897.896	V	1	25	—		2895.32	Cs	—	—	Bs		2892.86	N	—	[25 h]	Fl	
2897.873	Pt I	400	15	—		2895.32	P	—	[25 w]	Gu		2892.828	Fe II	2	20	—	
2897.85	Fe	2	—	—		2895.262	U	5	4	—		2892.819	U	4	2	—	
2897.83	I	—	[20]	Bl		2895.22	Xe II	—	[80 h]	Hu		2892.812	Mo	25	30	—	
2897.812	Cb	15	150	—		2895.215	Fe II	—	80	—		2892.78	Ti	3	—	—	
2897.797	Mn	15	—	—		2895.190	Mn	12	—	—		2892.76	Se	—	[10]	Bl	
2897.76	La II	2	5 hf	—		2895.18	V	10	4 h	—		2892.7	Rn	—	[150]	Wo	
2897.715	Ru	6	60	—		2895.143	Th	10	10	—		2892.68	Nd	5	—	—	
2897.704	Cr	3	25	—		2895.103	Ta	125	15	—		2892.659	V II	30	150 r	—	
2897.676	Yt II	3	12	—		2895.064	Os	25	8	—		2892.658	Mn	20	—	—	
2897.653	Ir	3	—	—		2895.035	Fe I	125	70	I		2892.644	Re	25	—	—	
2897.64	Fe	4	1	—		2894.99	Yb	—	5 d	Me		2892.637	U	6	4	—	
2897.636	U	3 h	6 h	—		2894.99	Ho	20	10	Ex		2892.605	W	4	3	—	
2897.633	Rh	2	10	—		2894.98	O	—	[10 h]	Mh		2892.565	Mo	5	—	—	
2897.628	Mo	20	25	—		2894.911	Cb	2	5 wh	—		2892.561	Hf	12	5	—	
2897.592	Re	10 d	—	—		2894.881	Ce	4	—	—		2892.560	Ru	20	6	—	
2897.518	Er	12	2	—		2894.855	Mo	—	8	—		2892.54	Eu	40 w	30 h	—	
2897.49	N	—	[15 h]	Fl		2894.85	Cs	—	[2]	Bs		2892.485	Mn	5	—	—	
2897.46	Tb	3	20 h	Ed		2894.842	U	5	2	—		2892.483	Fe	100	40	—	
2897.458	U	6	4 h	—		2894.84	Lu	60	200	Me		2892.47	O II	—	[5 h]	Mh	
2897.427	Mn	8	—	—		2894.832	V	—	7	—		2892.441	V II	30	150 r	—	
2897.421	Mo	—	20	—		2894.794	Zr II	2	—	—		2892.392	Mn	8	4	—	
2897.36	Ho	—	20 h	Ex		2894.778	Fe II	—	80	—		2892.265	Zr I	20	—	—	
2897.351	Cb	3	2	—		2894.77	Tb	—	10	Ex		2892.261	Ir	5	3 h	—	
2897.30	A	—	[10]	Rt		2894.732	Ce	2	—	—		2892.247	Co	25	—	—	
2897.262	Fe II	—	200	—		2894.63	Kr II	—	[2 wh]	Me		2892.22	Ag II	—	2 h	—	
2897.200	W	4	3	—		2894.616	W	5	2	—		2892.216	Rh I	30	—	—	
2897.172	Ce	4	—	—		2894.577	V I	12	—	—		2892.215	Fe II	2	1	—	
2897.152	Ir I	20	10	—		2894.512	U	15	15	—		2892.206	U	6	8	—	

2892.2—2884.8 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2892.2	bh B	200	-	-	L	2889.88	Fe	20	15	-	-	2887.252	U	25	-	25	-
2892.175	Th	6	5	-	-	2889.839	Rh I	70	30	-	-	2887.2	Rn	-	-	[125]	Pe
2892.145	Ce	15	-	-	-	2889.837	Mo	12	-	-	-	2887.19	Pb II	-	-	[10]	Gs
2892.116	W	4	3	-	-	2889.77	W	2	20	-	-	2887.17	Br	-	-	[5]	Bl
2892.06	Br	-	-	[5]	Bl	2889.73	Th	10	-	-	Ex	2887.158	V	1	-	9	-
2892.028	Mo	-	15	-	-	2889.72	B	-	2	-	Sy	2887.154	Fe	6	-	2	-
2892.000	Ta	80 h	10	-	-	2889.64	Tm	10	20	-	Me	2887.135	Hf	25	-	3	-
2891.973	Ru	-	4	-	-	2889.627	U	30	50	-	-	2887.125	Ir I	10	-	-	-
2891.96	Au I	8	20	-	-	2889.621	V II	40	150 r	-	-	2887.12	Xe II	-	-	[8]	Hu
2891.96	Ca	-	2	-	Ad	2889.619	Hf	30	10	-	-	2887.113	Ru	3	-	-	-
2891.950	V I	2	-	-	-	2889.581	Ir I	10	5	-	-	2887.106	Er	10	-	2 h	-
2891.906	Fe	25	10	-	-	2889.58	Mn	12 d	10	-	-	2887.093	Cb	1 h	-	10	-
2891.882	Re	40	-	-	-	2889.54	Tb	3	10	-	Ed	2887.053	Ru	-	-	4 h	-
2891.88	Cr	-	35	-	-	2889.54	I	-	[20]	Bl	-	2886.997	Cr I	100	-	18	-
2891.843	Ta	500 W	100	-	-	2889.484	Cr	2	25	-	-	2886.972	Mo	1	-	25	-
2891.796	U	10	8	-	-	2889.463	Re I	30 w	-	-	-	2886.967	V	2	-	15	-
2891.77	Th	6 d	5 d	-	-	2889.460	Ce	2	-	-	-	2886.938	Re	20	-	-	-
2891.75	Cs	-	-	[2]	Bs	2889.430	Zr II	3	3	-	-	2886.925	U	3	-	6	-
2891.728	Ce	6	-	-	-	2889.385	Ru	-	15	-	-	2886.92	Eu	5	-	-	-
2891.72	Cl	-	-	[6]	An	2889.380	Ta	40	5	-	-	2886.895	W II	3	-	20	-
2891.71	Fe	15	10	-	-	2889.3	Rn	-	[15]	Pe	-	2886.825	Er	2	-	-	-
2891.649	Ru	8	5	-	-	2889.266	U	5	2	-	-	2886.804	U	3	-	2	-
2891.642	V II	40	200 r	-	-	2889.265	Cr I	60 r	30	-	-	2886.80	B	-	-	2	Sy
2891.636	Ce	3	-	-	-	2889.234	Ir I	5	-	-	-	2886.71	Zr II	-	-	2 w	Ks
2891.61	A II	-	-	[40]	Rt	2889.205	Cr	15	20	-	-	2886.678	Mn	15	-	6	-
2891.51	Sb	-	20 wh	-	-	2889.19	Nd	-	5	-	-	2886.67	Cs	-	-	[20]	Bs
2891.483	Re	25	-	-	-	2889.129	Zr I	3	-	-	-	2886.647	Ta	5 h	-	2	-
2891.46	W	1	10	-	-	2889.121	U	5	4	-	-	2886.63	Cl II	-	-	[3]	Ks
2891.415	Cr	30	15	-	-	2889.106	Rh I	80	1 h	-	-	2886.62	Cb	-	-	8	-
2891.41	Cb	-	10 wh	-	-	2889.07	Xe II	-	[8]	Hu	-	2886.606	Mo	30	-	1	-
2891.41	Tb	3	500	-	Ex	2888.932	Ti II	15	25	-	-	2886.60	Cd II	-	-	[3]	Vs
2891.40	Fe I	4	10	-	-	2888.833	Cb	10	100	-	-	2886.542	Os	5	-	5	-
2891.39	Ho	-	10	-	Ex	2888.784	W	4	3	-	-	2886.536	Ru	60	-	50	-
2891.387	Er	20	12	-	-	2888.762	Sm	-	20	-	-	2886.510	Th	5	-	6	-
2891.38	Yb	50 h	100	-	-	2888.741	U	10	6	-	-	2886.46	W	-	-	7	-
2891.321	Mn	3	3	-	-	2888.74	Cr	3	40	-	-	2886.459	Tm	30	-	5	Me
2891.286	U	3	2	-	-	2888.700	Ce	10	-	-	-	2886.457	Yt I	15	-	6	-
2891.275	Mo	15	20	-	-	2888.692	W II	-	5	-	-	2886.449	U	15	-	6 h	-
2891.254	Th	10	10	-	-	2888.690	Mo	-	10	-	-	2886.445	Co I	50	-	2	-
2891.214	Sb	-	-	[12]	Lg	2888.63	Ti	-	70 wh	-	-	2886.332	Ce	3	-	-	-
2891.139	Ru	5	-	-	-	2888.628	Ru	4	10	-	-	2886.322	Cb	2	-	5	-
2891.104	Cr	10	40	-	-	2888.54	Dy	2	-	-	Ex	2886.318	Fe I	50	-	15	-
2891.074	U	8	10	-	-	2888.530	Mo	10	-	-	-	2886.28	Tb	15	-	10	m
2891.066	Ti II	20	50	-	-	2888.521	V I	2	-	-	-	2886.26	Yb	2	-	5	-
2891.038	Ta	150 W	30 h	-	-	2888.48	I	-	[12]	B	-	2886.250	Na II	6	-	[20]	Fr
2891.03	Hf	6	-	-	Me	2888.456	Ce	6	-	-	-	2886.248	Th	6	-	5	-
2891.026	Dy	3	1	-	-	2888.43	Ne II	-	[2]	Bn	-	2886.228	Fe II	-	-	3	-
2890.994	Mo II	30	50 h	-	-	2888.382	Cr I	15	-	-	-	2886.049	U	5	-	4	-
2890.99	W	2	8	-	-	2888.380	U	3	2	-	-	2886.046	Ti	8	-	2	-
2890.93	Tm	60	15	-	Me	2888.32	B	-	2	-	Sy	2886.04	Lu	3	-	-	Me
2890.893	Th	6	4	-	-	2888.305	W II	6	10	-	-	2885.974	Rh I	2	-	1	-
2890.886	Ru	2	-	-	-	2888.26	U	12	12	-	-	2885.96	Yb	1	-	4	-
2890.849	Os	10	4	-	-	2888.246	V	20	125 r	-	-	2885.932	Ce	2	-	-	-
2890.84	Nd	5	2 h	-	-	2888.196	Pt I	50	-	-	-	2885.931	Re	15	-	-	-
2890.746	Dy	2	1	-	-	2888.160	Er	7	1	-	-	2885.928	Fe II	-	-	70	-
2890.726	Cr	18	-	-	-	2888.153	Mo	1	40	-	-	2885.921	W	4	-	3	-
2890.687	Ce	2 W	-	-	-	2888.093	Fe II	-	80	-	-	2885.90	Tb	10	-	10	Ex
2890.66	W	2	12	-	-	2888.074	Ce	2	-	-	-	2885.82	Nd	-	-	5	-
2890.61	Ti	-	50 wh	-	-	2888.036	Zr II	2	6	-	-	2885.736	Mo	10	-	25	-
2890.558	Cb	1	5	-	-	2888.03	Yb	4	20	-	-	2885.605	U	4	-	4	-
2890.554	V	1	12	-	-	2888.013	Re	3	-	-	-	2885.60	Au II	-	-	12	-
2890.535	Ir I	8	-	-	-	2888.012	Hf II	5	3	-	-	2885.600	Gd	5	-	10	-
2890.52	Ta	1	2	-	-	2887.995	Ru I	30	4	-	-	2885.50	Dy	2	-	1	-
2890.48	Co	-	10	-	Ex	2887.96	Fe	4	1	-	-	2885.50	C II	-	-	6 h	En
2890.444	Dy	2	-	-	-	2887.91	O II	-	[10 h]	Mh	-	2885.473	Hf II	12	-	15	-
2890.428	U	6	4	-	-	2887.907	U	3	2	-	-	2885.442	W II	1	-	5	-
2890.42	Fe	4	1	-	-	2887.88	Eu	30	30	-	-	2885.362	U	6	-	4	-
2890.409	Ce	2	-	-	-	2887.821	Th	18	18	-	-	2885.36	O	-	-	[10 h]	Mh
2890.374	Pt II	5 r	25	-	-	2887.807	Fe	80	60	-	-	2885.350	Fe	7	-	2	-
2890.36	Yt I	3	-	-	-	2887.77	Cr	-	35	-	-	2885.33	Tb	3	-	-	Ex
2890.351	Cb	1 h	10	-	-	2887.77	Sn	-	2 h	-	-	2885.305	Co I	3	-	-	-
2890.24	As II	-	3	-	Ro	2887.697	V I	2	-	-	-	2885.291	Co	10	-	-	-
2890.200	In II	-	-	[20]	Ps	2887.692	Cb	2	15	-	-	2885.25	N	-	-	[50 h]	Fl
2890.181	Cb	3	1	-	-	2887.666	Re	125	-	-	-	2885.187	U	12	-	6	-
2890.173	Co	8	-	-	-	2887.656	W	8	7	-	-	2885.167	Re	2	-	-	-
2890.161	In II	-	-	[40]	Ps	2887.619	Mo	20 d	-	-	-	2885.141	La II	5	-	50	-
2890.16	Cr	20	-	-	-	2887.594	U	6	8	-	-	2885.14	Tb	-	-	70	Ex
2890.141	V	2	12	-	-	2887.56	Nd	-	5	-	-	2885.14	Lu	40 h	-	3	Me
2890.111	U	6 h	2	-	-	2887.541	Hf	15	2	-	-	2885.125	Mn	1	-	2	-
2890.060	Ta	15	2	-	-	2887.453	Ti II	3	12	-	-	2885.045	Th	12	-	15	-
2889.992	Fe	15	8	-	-	2887.36	I	-	[20]	Bl	-	2884.972	Cb	3	-	4	-
2889.97	Pd II	-	2 h	-	Bx	2887.312	Re	25	-	-	-	2884.93	C II	-	-	2 h	En
2889.965	W	7	2	-	-	2887.312	Fe II	3	20	-	Do	2884.925	U	2	-	2	-
2889.929	Sb	-	5	-	Sp	2887.298	Cb	2	1	-	-	2884.848	Ru	8	-	-	-
2889.900	Cb	4	2	-	-	2887.264	Ru	2	-	-	-	2884.82	Dy	2	-	1 h	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
2884.788	Mo	—	6	—	2882.036	Mo	—	3	—	2879.393	W	10	10	—
2884.785	V II	40	200 r	—	2882.014	Th	10	12	—	2879.366	Ce	2	—	—
2884.779	Fe II	—	25 h	Do	2882.01	I	—	[20]	Bl	2879.364	Cb	2 d	10	—
2884.729	Ce	3	—	—	2881.951	Ti I	2	—	—	2879.36	Nd	5 h	2 wh	—
2884.70	Tb	5	3	m	2881.937	Mo	—	3	—	2879.360	Ru	3	—	—
2884.636	W	5	4	—	2881.931	Cr	1	30	HI	2879.31	A	—	[5]	Rt
2884.634	Re	25	—	—	2881.92	Yb	—	3	—	2879.276	Re	25	—	—
2884.613	U	2	2	—	2881.909	U	4	2	—	2879.274	Cr I	60	12	—
2884.590	Mo	5	—	—	2881.80	Ca	—	4	Ad	2879.25	Cs	—	[8]	Bs
2884.56	Zr II	—	4 h	—	2881.772	Ce	2	—	—	2879.242	Fe II	—	25	—
2884.556	Rh I	5	—	—	2881.737	Ir	3	—	Ab	2879.22	Cb	—	5 h	—
2884.51	As II	—	25	Ro	2881.70	O	—	[10]	Mh	2879.205	Th	10	5	—
2884.507	Ru	20	5	—	2881.643	Ir I	7	—	—	2879.163	V II	50	35	—
2884.455	Ce	2	—	—	2881.61	In	—	2	Sq	2879.16	Yb	—	5	—
2884.42	Cs	—	[8]	Bs	2881.59	Dy	2 h	—	—	2879.12	Fe	2	—	—
2884.408	Os	20	5	—	2881.580	Co	4	1	—	2879.112	Hf II	15	10	—
2884.383	Cu II	—	30	—	2881.578	Si I	500	400	—	2879.107	W	10	10	—
2884.305	W	—	10	—	2881.578	Ce	40	2	—	2879.062	Ru	—	60	—
2884.302	U	3	2	—	2881.578	Gd	40	—	—	2879.047	Mo	15	100 h	—
2884.295	Th	12	12	—	2881.463	Al II	—	[30]	Sy	2879.04	O	—	[7]	Mh
2884.28	Dy	2 h	1 h	—	2881.420	Ce	4 s	—	—	2878.951	Ta	40 r	3 s	—
2884.25	N	—	[8 h]	Fl	2881.370	Mo	—	10	—	2878.913	Er	7	2 h	—
2884.21	Kr II	—	[2]	Me	2881.357	Ir	4	—	—	2878.869	U	5	4	—
2884.21	A	—	[5]	Rt	2881.328	Gd	2	3	—	2878.86	Eu	20	—	—
2884.20	Al	—	[30]	Sy	2881.31	Tb	10	—	m	2878.786	Ce	2	—	—
2884.175	W	8	4	—	2881.276	Ru	30	3	—	2878.761	Fe	8	5	—
2884.13	F	—	[2]	Di	2881.254	Rh I	20	—	—	2878.76	A	—	[2]	Rt
2884.107	Ti II	35	125	—	2881.247	Ni II	—	8	—	2878.739	Cb	3	10	—
2884.08	In	—	2	Sq	2881.232	Ta	30	5	—	2878.719	U	6	4	—
2884.07	Sb II	—	[3]	Lg	2881.23	Cd I	50 R	[30]	Fl	2878.716	W	10	8	—
2884.063	V	—	12	—	2881.16	Cs	—	[20]	Bs	2878.703	Dy	2	1 h	—
2884.055	Re	20	—	—	2881.158	Ir	15	3	—	2878.655	Rh I	50	10	—
2884.052	Ce	2	—	—	2881.147	Th	10	10	—	2878.643	I II	—	[400]	Ke
2883.957	Mo	—	10	—	2881.141	Cr	25	2	—	2878.64	Fe	3	2	—
2883.91	W II	—	5	—	2881.140	Na II	8	[60]	Fr	2878.635	Ce	8	—	—
2883.90	P	—	[25]	Gu	2881.131	Ce	12	—	—	2878.558	Co I	12	—	—
2883.895	Ta	8	5 wh	—	2881.07	W	5	1	—	2878.52	Tb	—	10	Ex
2883.82	O I	—	[15]	Fh	2881.058	Dy	2	1 h	—	2878.514	Ir	4	—	—
2883.81	Bi	3	3	To	2881.017	U	2	2	—	2878.48	Xe	—	[2 wh]	Hu
2883.8	Rn	—	[25]	Pe	2880.99	Ho	20	10	Ex	2878.449	Sm	4	25	—
2883.798	Zr II	5	2	—	2880.928	Ce	2	—	—	2878.449	Cr	20	80	—
2883.749	U	3	4	—	2880.87	Ca	—	2	Ad	2878.400	Os	40	12	—
2883.745	Cs II	—	[2]	Ot	2880.869	Cr II	20	25	—	2878.382	Mo	20	—	—
2883.735	Fe	30	—	—	2880.849	Ce	2	—	—	2878.36	Tm	10	20	Me
2883.71	Xe II	—	[7]	Hu	2880.830	Zr I	5	—	—	2878.30	W	1	10	—
2883.702	Fe II	—	300	—	2880.827	Fe II	1	25	—	2878.299	V	—	7	—
2883.607	Ce	2	—	—	2880.800	V	2	20	—	2878.240	U	5	2	—
2883.603	Co I	15	—	—	2880.77	Cd I	200 R	125	—	2878.21	Tm	3	20	Ma
2883.595	Ru	30	5	—	2880.756	Fe II	15	50	—	2878.20	Ta	4	15 h	—
2883.56	W	4	—	—	2880.715	Cb	4 w	50	—	2878.165	Cb	2	—	—
2883.45	Au I	15	20	—	2880.648	Rh I	10	2 wh	—	2878.079	W	4	8	—
2883.450	Re	60	—	—	2880.644	La II	4	40	—	2878.040	Ru	—	15	—
2883.38	Ca	—	3	Ad	2880.637	Ce	18	—	—	2878.022	V	2	10	—
2883.297	Mo	—	6	—	2880.627	W	7	6	—	2878.018	Ce	2	—	—
2883.25	W	2	10 d	—	2880.582	Fe I	15	5	—	2877.978	Cr II	30	100	—
2883.231	Ti I	3	—	—	2880.489	U	12	15	—	2877.915	Sb I	250 W	150	—
2883.178	Cb	100	800 R	—	2880.356	Ce	6	—	—	2877.91	Ca	1 h	4	—
2882.934	Cu I	3	—	IBu	2880.32	Pd II	—	[3]	Bx	2877.890	Eu	2	1	—
2882.929	U	8	12	—	2880.31	Se	—	[25]	Bl	2877.885	Dy	2	1 h	—
2882.902	Mn	25	—	—	2880.293	Ti II	—	20	—	2877.87	Pd II	—	15 wh	—
2882.75	P	—	[18]	Gu	2880.29	Co II	—	50 wh	—	2877.852	Cb	2	4	—
2882.741	U	18	20	—	2880.290	Ne I	—	[3]	Ps	2877.840	Ru I	3	1	—
2882.635	Ir I	40	6	—	2880.27	Ho	20	10	Ex	2877.830	U	2	2	—
2882.609	Ce	15	—	—	2880.230	Ru	2	—	—	2877.76	Eu	5	—	—
2882.603	Er	6	—	—	2880.211	Ir	10	2 h	—	2877.689	Cu II	5	20	IBu
2882.587	U	8	6	—	2880.192	U	1	4	—	2877.688	V	15	100 R	—
2882.584	Ru	4	1 h	—	2880.159	W	—	7	—	2877.686	Ta	15	80 h	—
2882.557	I	—	[8]	Ke	2880.080	Ru	—	25	—	2877.678	Ir I	20	10	—
2882.543	Mo	6	—	—	2880.067	Ir I	7	—	—	2877.66	N	—	[8 h]	Fl
2882.516	Th	8	8	—	2880.030	V II	25	150 r	—	2877.62	Cb	—	5 W	—
2882.501	V II	35	200 r	—	2880.018	Ta	150	50	—	2877.569	U	6	4	—
2882.474	Cb	1	5	—	2879.986	U	8	2	—	2877.551	Zr II	4	4 h	—
2882.4	Rn	—	[3]	Wo	2879.755	Ru	50	12	—	2877.53	P	—	[10]	Gu
2882.378	Mo	1	25	—	2879.737	Ta	150	10	—	2877.520	Pt II	40	200 h	Sh
2882.366	Rh	80	10	—	2879.73	N	—	[25 h]	Fl	2877.436	Ti II	30	100	—
2882.345	U	6	8	—	2879.689	Mo	1	25	—	2877.351	Os	30	2	—
2882.332	Ta	3	80	—	2879.621	Co	25	—	—	2877.301	Fe I	200	125	I
2882.235	Re	6	—	—	2879.593	U	6	4	—	2877.29	Cs	—	[8]	Bs
2882.220	Co I	30	—	—	2879.58	Te	—	[5 h]	Bl	2877.16	Hf	12	—	Me
2882.20	Ag II	—	10 h	—	2879.533	Th	6	4	—	2877.089	Ru	5	1	—
2882.192	W	3	—	—	2879.516	Ta	50 s	10 h	—	2877.047	U	6	12	—
2882.15	Yb	—	2	—	2879.495	Cb	25	2	—	2877.032	Cb	3	10 w	—
2882.15	Zn II	—	[25]	Vs	2879.488	Mn	12	5	—	2877.0	Rn	—	[7]	Pe
2882.116	Ru	30	200	—	2879.43	Fe	7	2	—	2876.947	Cb	40 W	500 W	—
2882.087	Zr II	2	3	—	2879.407	Ir I	20	5	—	2876.936	V	4	25	—

2876.9—2868.4 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2876.930	W	8	12	2873.650	Hf	10	-	2871.05	Tb	3	10
2876.872	Re	15	-	2873.640	U	3	6	2870.98	Ca	-	2
2876.802	Fe II	-	100	2873.637	Mo	10	1	2870.974	U	18	20
2876.773	Rb II	-	[5]	2873.623	Rh	60	10	2870.917	Sc II	2	5
2876.771	Fe	5	2	2873.557	Ta	150	50 I	2870.905	W	9	12
2876.661	Cr	-	20	2873.53	Ag	3	2	2870.903	Mo	15	-
2876.56	Fe	3	-	2873.528	Fe	15	1	2870.89	Na	6	6
2876.537	Mo	15	2	2873.50	In	-	2	2870.825	Th	6	5
2876.49	F II	-	[10]	2873.485	Cr II	30	125	2870.742	U	4 h	4 h
2876.433	U	8	2	2873.44	U	3	2 h	2870.654	Cb	2	-
2876.43	Ne II	-	[18 I]	2873.41	Se	-	[5]	2870.626	W	3 d	4 d
2876.421	Th	10	8	2873.401	Fe II	-	300	2870.624	Ce	6	-
2876.392	Dy	2	-	2873.383	W	4	10	2870.602	Fe II	-	15
2876.329	Hf II	30	100	2873.360	Ta	200 W	40 h	2870.561	Ir I	3	-
2876.245	Cr II	25	80 Wh	2873.356	V I	20	-	2870.548	Ru	-	50
2876.183	Ce	2	-	2873.354	Ce	2	-	2870.547	V I	50 r	20 r
2876.111	Ta	50 r	5	2873.334	Ir I	18	3	2870.527	Er	3	-
2876.095	W	-	5	2873.316	Pb	100 R	60	2870.526	W	6	2
2876.06	Eu	20	-	2873.308	Ru	4	60	2870.500	Ce	2	-
2876.046	Nd	-	10	2873.298	U	6	4	2870.468	Pt	10	2
2876.028	Re	3	-	2873.24	Hg	-	[20]	2870.436	Cr II	25	300 W
2876.01	Fe	15	-	2873.19	Zn	-	[3]	2870.423	U	8	2
2875.993	Cr II	30	80 wh	2873.186	Cr	25	-	2870.413	Th	18	20
2875.983	Ir I	25	15	2873.182	V	4	50	2870.35	Cb	-	10 wh
2875.983	Zr I	70	1	2873.18	La II	1	2	2870.220	Ir	5	-
2875.9	P	-	[5 h]	2873.13	F II	-	[5]	2870.214	Ru	4	-
2875.881	U	5	4	2873.10	Si	-	[2]	2870.179	Mo	10	1
2875.88	Yb	-	8	2873.01	Tm	15	20	2870.178	Cr	12	-
2875.88	F II	-	[5]	2873.005	U	10	6	2870.16	Pd II	-	2 h
2875.849	Pt II	20	80 h	2873.0	Pb II	-	[20]	2870.113	V	1	12
2875.79	Ti	-	40 wh	2873.00	Ne II	-	[10]	2870.083	Mn	4	4
2875.744	Pd	2	-	2872.914	Mn	1	3	2870.06	Yb	1	10
2875.71	Kr	-	[2 h]	2872.888	I	-	[60]	2870.045	Ce	2	-
2875.689	V II	10	40	2872.884	Mo	2	50	2870.04	Cr	12 h	-
2875.605	Ir I	25	15	2872.837	Er	6	1	2870.04	Ti	-	100 wh
2875.42	Br	-	[7]	2872.799	Cb	1	10	2870.04	V I	7 w	-
2875.392	Cb	50 r	300	2872.673	Re	10	-	2870.03	Co II	-	50 wh
2875.346	Fe II	-	70	2872.663	Ne I	-	[35]	2869.969	Mo	-	5
2875.317	Ru	4	-	2872.592	Ce	3	-	2869.961	V II	7	20
2875.304	Fe I	125	50	2872.59	Br	-	[25]	2869.95	Ca	-	7
2875.30	Cs	-	[8]	2872.581	Mn	30	-	2869.95	Ne II	-	[5]
2875.286	Re I	80	-	2872.527	Zr II	2	3	2869.927	Th	6	8
2875.25	I	-	[12]	2872.50	Fe	4	-	2869.91	Rh	8	1 h
2875.208	W	10	4	2872.496	W	5	4	2869.90	Li	-	3
2875.198	U	18	12	2872.481	Ce	3	-	2869.83	Fe	10	5
2875.190	Dy	2	-	2872.435	Ce	2	-	2869.828	Cb	1	10
2875.988	U	2	2	2872.405	Os	50	8	2869.825	Hf II	25	20
2874.984	Ru	80	50	2872.382	Fe II	2	20	2869.82	Rb	-	[10]
2874.955	Os	50	15	2872.35	Cs	-	[8]	2869.811	Zr II	30	30
2874.936	Ta	25	2	2872.336	Fe I	150	50	2869.73	Si	-	[2]
2874.917	Ce	2	-	2872.303	Re	15	-	2869.72	Te	-	[10]
2874.882	Fe	60	20	2872.18	Te	-	[5]	2869.704	Ir I	15	2
2874.847	Mo	2	60	2872.111	Ir	2	3 h	2869.690	Fe II	-	3
2874.83	Er	12	1	2872.110	U	3	4	2869.647	Ce	3	-
2874.821	Ce	2	-	2872.08	Se II	-	[3]	2869.607	W	7 s	10
2874.80	F II	-	[15]	2871.988	U	6 h	4 h	2869.565	Mo	15	-
2874.790	U	3	2	2871.899	W	-	10	2869.559	Ce	2	-
2874.635	Os	10	4	2871.892	Mo	10	-	2869.52	Ta	3	5 h
2874.566	Cb	5	3	2871.814	Re I	50	-	2869.463	V I	7	-
2874.56	Cu	3 h	-	2871.73	Fe	3	1	2869.373	U	6	4
2874.551	Ce	2	-	2871.681	Er	9	1	2869.308	Fe I	300	70
2874.55	A	-	[5]	2871.644	U	6	4	2869.22	Tm	100	300
2874.521	Ta	20	3	2871.638	Ru	50	5	2869.217	Mo	-	15
2874.469	U	6	4	2871.633	Ce	6	-	2869.20	Ta	2	-
2874.30	Fe	2	-	2871.632	Cr I	50	2	2869.163	Fe II	-	3
2874.28	La II	5	3	2871.576	Ce	6	-	2869.134	V	25	150 r
2874.244	Ga I	10	15 r	2871.57	Eu	4	1 h	2869.100	W	9	3
2874.22	F II	-	[2]	2871.508	Mo II	100	100 h	2868.975	U	6	6
2874.207	V	7	20	2871.47	Ru	-	30	2868.960	Ce	6	-
2874.173	Zr	-	2 wh	2871.454	Cr	-	80	2868.871	Fe II	5	60
2874.172	Fe I	300	200	2871.44	Nd	5	-	2868.865	U	2	2
2874.167	Ta	150	15	2871.417	Ta	200	50	2868.86	Te	-	[100]
2874.135	Ce	30 w	-	2871.40	F II	-	[25]	2868.85	Nd	-	5
2874.083	U	15	10	2871.37	Pd II	-	10 wh	2868.767	I	-	[30]
2874.052	Ru	5	-	2871.367	W	10	8	2868.742	Ti II	15	25
2873.99	Rh I	6	-	2871.354	Rh	100	10 h	2868.729	W II	6	25
2873.93	Rb	-	[2]	2871.32	Cs	-	[2]	2868.7	Rn	-	[70]
2873.819	Cr II	20	40	2871.270	Na II	6	[40]	2868.678	Th	8	6
2873.808	Er	10	2	2871.24	Xe	-	[25 hs]	2868.651	Ta	150	40
2873.796	Ir I	2	5	2871.24	Co	-	100	2868.537	Ru	5	-
2873.731	Ru	-	12	2871.186	Ru	4	-	2868.525	Cb	15	300
2873.72	Kr II	-	[4 wh]	2871.183	Mo	10	-	2868.521	Zr I	3	-
2873.717	Th	8	5	2871.129	Fe II	-	20	2868.52	Al II	-	[80]
2873.65	Ag II	3	100 wh	2871.075	Ce	15	-	2868.455	Fe II	80	40
2873.65	Fe	8	2	2871.060	Fe II	-	40	2868.436	U	2	6

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk.,	[Dis.] R			Arc	Spk.,	[Dis.] R			Arc	Spk.,	[Dis.] R
2868.41	Cl II	—	[10]	Ks	2866.061	W	15	10	—	2863.327	Sn I	300 R	300 R	—
2868.33	Ca	—	[8]	Bs	2866.057	Ce	3	—	—	2863.324	Ru	30	80	—
2868.316	Mo	2	20	—	2866.05	Sc II	4	5 wh	—	2863.260	Mn	3	—	—
2868.309	Ru	8	5	—	2865.892	Cr	1	15	—	2863.225	Ce	2	—	—
2868.28	Cl	—	[3]	An	2865.89	Se	—	[10]	Bl	2863.20	Cl	—	[3]	An
2868.276	Rh I	10	—	—	2865.87	Fe	2	—	—	2863.189	U	3 h	4 h	—
2868.26	Cd I	100	80	m	2865.85	A II	—	[20]	Rt	2863.121	Mo	—	20	—
2868.230	Ce	8	—	—	2865.80	W	—	10	—	2863.08	Fe	3	2	—
2868.214	Fe	15	8	—	2865.734	In II	—	[5]	Ps	2863.049	V I	20	7 wh	—
2868.188	Ru I	8	4	—	2865.684	In II	—	[50]	Ps	2863.018	Sb	—	4 wh	Sp
2868.187	U	10	8	—	2865.680	Os	15	5	—	2863.006	W	9 s	8 s	—
2868.151	Re	5	—	—	2865.679	U	30	50	—	2863.000	Ru I	6	—	—
2868.148	Pb	—	5	—	2865.676	Cr	—	20	—	2862.967	La II	2	15 hl	—
2868.110	Mo	3	20	—	2865.637	In II	—	[5]	Ps	2862.935	Rh I	150	60	—
2868.103	V I	40	30 r	—	2865.63	Nd	5	—	—	2862.881	Ru	6	60	—
2868.053	Nd	—	5	—	2865.620	Mo	5	20	—	2862.839	Mo	10	—	—
2868.01	Tm	15	40	Me	2865.609	Cb	5	30	—	2862.802	U	6	6	—
2867.918	W II	1	10	—	2865.604	Zr II	4	4	—	2862.785	Ce II	15	—	—
2867.880	Fe I	5	2	—	2865.571	Hf II	3	1 h	—	2862.77	W	6	2	—
2867.82	Ho	—	40 h	Ex	2865.569	W	7	9	—	2862.766	Co I	9 h	—	—
2867.805	U	6	4	—	2865.563	Ce	2	—	—	2862.695	Dy	2	—	—
2867.702	Hf	10	2	—	2865.530	Ru	—	20	—	2862.618	U	6	4	—
2867.67	Te	—	[5]	Bl	2865.513	Ce	8	—	—	2862.606	Co I	50	—	—
2867.648	Cr II	80	100 R	—	2865.505	Mo	1	8	—	2862.605	Er	5	—	—
2867.630	Ir I	12	2	—	2865.502	Ni I	5	—	—	2862.571	Cr II	80	300 R	—
2867.62	Dy	2	—	—	2865.501	Co I	2	1 h	—	2862.57	Eu	100 W	70	—
2867.563	Fe	60	30	—	2865.45	Ca	—	[2]	Bs	2862.52	O	—	[10 h]	Mh
2867.560	W	4	3	—	2865.378	Ce	8	—	—	2862.498	Fe I	100	50	—
2867.473	Co	4	—	—	2865.334	Cr	15	15	—	2862.493	Gd	5	5	—
2867.463	Ru	3	—	—	2865.311	W	8	—	—	2862.485	Ir I	10	—	—
2867.41	Ta	5 h	150	—	2865.252	Ir	8	—	—	2862.424	W	7	2	—
2867.401	W II	3	10	—	2865.189	Fe	2	—	—	2862.410	U	15	10	—
2867.387	In II	—	[10]	Ps	2865.17	I II	—	[2]	Mu	2862.40	Cs	—	[8]	Bs
2867.314	Fe	60	30	—	2865.140	U	10	10	—	2862.385	V I	12	—	—
2867.30	F II	—	[10]	Di	2865.118	Mo	4	—	—	2862.385	Ta	2	1	—
2867.30	Eu	2	—	—	2865.107	Cr II	60	200 R	—	2862.373	La II	2	6	—
2867.273	Ce	5	—	—	2865.097	Zr II	2	2	—	2862.349	Ir I	10	—	—
2867.222	In II	—	[10]	Ps	2865.051	Pt II	20	80 h	Sh	2862.321	Ti II	20	40	—
2867.198	Re	40	—	—	2864.973	Fe II	—	50	—	2862.31	Cd I	15	10	—
2867.096	Cr	20	35	—	2864.84	W	1	9	—	2862.302	V	1	25	—
2867.094	Ru	—	18	—	2864.834	Re	8	—	—	2862.26	O	—	[10 h]	Mh
2867.050	Mo	10	—	—	2864.819	Ce	4	—	—	2862.17	Kr II	—	[2 wh]	Me
2867.04	Yb	4	40	—	2864.73	Xe II	—	[100]	Hu	2862.070	Ne I	—	[8]	Pa
2867.04	Br	—	[7]	Bl	2864.724	Ta	3	—	—	2862.06	Cl II	—	[5]	Ks
2866.986	U	4	2	—	2864.656	Mo	40	3	—	2862.06	P	—	[10]	Gu
2866.951	V I	20	—	—	2864.654	Th	8	6	—	2862.025	Ta	40	10	—
2866.90	Cs	—	[2]	Bs	2864.569	Re	10	—	—	2861.99	Ti	—	100 wh	Ex
2866.891	Pt II	6	15	—	2864.52	Au II	—	10	—	2861.981	Ta	30	5	—
2866.840	Cb	—	2	—	2864.517	V	6	35	—	2861.90	Xe II	—	[10 h]	Hu
2866.809	Ce	12	—	—	2864.514	Pb	—	60	—	2861.858	Mo	—	10	—
2866.76	Xe II	—	[3]	Hu	2864.503	Ta	125	30	—	2861.833	I	—	[12]	Ke
2866.746	W II	3	9	—	2864.484	Ce	5	—	—	2861.74	Tm	20	30	Me
2866.742	Cr II	80	125 R	—	2864.46	W	—	12	—	2861.719	Ru I	12	—	—
2866.71	So II	3	—	Me	2864.42	Eu	10	10 h	—	2861.696	Hf II	50	125	—
2866.693	Mo	30	30	—	2864.404	Rh	70	10	—	2861.679	U	3	2	—
2866.693	Th	6	5	—	2864.4	Rn	—	[12]	Pe	2861.647	Cb	—	10 w	—
2866.689	Ir I	20	2	—	2864.367	Fe II	—	10	Do	2861.642	V	2	—	—
2866.669	Cb	3	3	—	2864.359	V I	40	25 r	—	2861.621	Ce	20	—	—
2866.66	Ta	3 d	1 dh	—	2864.34	Nd	—	5 h	—	2861.561	Mo	—	3 h	—
2866.644	Ru I	60	25	—	2864.321	Cb	5	10	—	2861.49	Ho	—	10	Ex
2866.629	Fe I	125	80	—	2864.306	Mo	40	2	—	2861.443	W	8	7 d	—
2866.615	W II	3	9	—	2864.276	U	18 h	12 h	—	2861.407	Ru I	60	35	—
2866.594	V I	25	6	—	2864.26	Ta	3	3 h	—	2861.401	V	—	15	—
2866.57	Ca	—	7	Ad	2864.257	Pb	—	60	—	2861.38	O	—	[10 h]	Mh
2866.464	In II	—	[18]	Ps	2864.23	In	—	3	Cx	2861.37	Th	8 d	8 d	—
2866.45	Li	—	2	An	2864.15	Ni II	—	300 wh	—	2861.364	Co I	15 r	—	—
2866.44	Tb	3	10	Ex	2864.099	U	8	12	—	2861.345	Ce	10	—	—
2866.440	Th	6	3	—	2863.949	Nd	5	2	—	2861.34	Tb	10	10	Ed
2866.420	U	3	4	—	2863.882	W	10	12	—	2861.31	Yb	3	25	Me
2866.418	V I	35	—	—	2863.864	Fe I	125	100	I	2861.302	Ti II	7	15	—
2866.373	Hf	50	12	—	2863.844	Ir I	15	—	—	2861.21	Yb	3	30	—
2866.373	W II	10	10	—	2863.811	Mo	30	100 h	—	2861.21	W	2	6	—
2866.355	Er	3	—	—	2863.79	V	4	12	—	2861.189	Fe II	1	30	—
2866.32	Ca	—	[8]	Bs	2863.76	Tm	15	40	Me	2861.169	Ce	3	—	—
2866.28	Si	—	[7]	Sy	2863.754	Bi I	80 w	18	Om	2861.13	U	10	15	—
2866.271	Dy	2	—	—	2863.700	Ni II	—	250	—	2861.117	Ta	30	—	—
2866.261	Mo	2	4	—	2863.68	So II	4	—	—	2861.099	Ru	—	20	—
2866.253	Ru	—	30	—	2863.57	O	—	[10 h]	Mh	2861.093	Cb	10	100	—
2866.18	Yb	—	3	Me	2863.55	Cl II	—	[7]	Ks	2861.054	W II	1	5	—
2866.160	U	6	6	—	2863.538	Co	3	—	—	2861.03	Te	—	[25]	Bl
2866.141	Ta	5	—	—	2863.44	U	6	4	—	2861.012	Hf II	40	90	—
2866.14	P	—	[20]	Gu	2863.435	Fe I	100	80	—	2861.011	Na II	1	[2]	Fr
2866.084	Mo	—	3	—	2863.35	Tm	10	—	Me	2860.956	Os	100	25	—
2866.082	Ru	—	30	—	2863.341	Ce	12	—	—	2860.934	Cr II	60	100	—
2866.076	Pt	1	3	Sh	2863.33	Fe	5	—	—	2860.92	I	—	[12]	Bl

2860.8—2853.2 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2860.864	Ce	2	-	-	-	2858.35	Yb	1	5	-	-	2855.87	I	-	-	[12]	Bl
2860.851	Zr I	15	-	-	-	2858.343	Fe II	3	200	-	-	2855.823	Ir I	10	2 h	-	-
2860.85	Cs	-	-	[8]	Bs	2858.34	Ho	-	10	-	-	2855.718	Ce	12	-	-	-
2860.84	Ti	-	-	25 wh	-	2858.29	Te	2	[100]	-	-	2855.716	V I	4	-	-	-
2860.801	U	15	12	-	-	2858.225	Cu I	30	2 h	-	-	2855.706	Mo	-	20	-	-
2860.762	Rh I	30	10 h	-	-	2858.154	U	8	6	-	-	2855.68	Tb	5	20	m	-
2860.73	A	-	-	[5]	Rt	2858.14	Si	-	[2]	-	-	2855.676	Cr II	60	200	Wh	-
2860.71	Cl II	-	-	[5]	Ks	2858.08	Yt II	7	15	-	-	2855.674	Bi	-	12	-	Om
2860.70	Dy	2	-	-	-	2858.08	Fe	4	1	-	-	2855.670	Fe II	2	200	-	-
2860.679	W	6	9	-	-	2858.054	Mo	-	4	-	-	2855.603	U	12 h	8 h	-	-
2860.678	Pt II	30	150 h	-	Sh	2858.044	Sb	10	5	-	-	2855.538	Cb	1	10	-	-
2860.675	Rh I	30	-	-	-	2858.039	W	10	9	-	-	2855.531	Re	15	-	-	-
2860.665	Ir I	12	2	-	-	2858.01	Ne II	-	[5]	Bn	-	2855.508	W	-	10	-	-
2860.643	Ce	2	-	-	-	2858.009	Ce	15 s	-	-	-	2855.491	V I	12	-	-	-
2860.64	Pb	-	2	-	Sx	2857.996	Fe	12	2	-	-	2855.491	Ti II	-	5 wh	-	-
2860.557	Hf	20	2	-	-	2857.979	Zr I	8	-	-	-	2855.448	Ce	15	-	-	-
2860.555	Ce	3	-	-	-	2857.97	Cr	2	40	-	-	2855.414	Er	15	3	-	-
2860.55	Tm	10	-	-	Me	2857.944	V I	50	7 h	-	-	2855.346	W	9	3	-	-
2860.52	In	-	5	-	Cx	2857.930	U	4	2	-	-	2855.340	Ru	-	18	-	-
2860.466	U	35	30	-	-	2857.89	O	-	[10 h]	Mh	-	2855.337	Os	25	8	-	-
2860.452	As I	50 r	50	-	Ro	2857.83	Cs	-	[2]	Bs	-	2855.33	A	-	-	[5]	Rt
2860.40	Yb	1	8	-	Me	2857.81	Ti	-	70 wh	-	-	2855.321	Ce	10	-	-	-
2860.374	Ru	3	-	-	-	2857.807	Fe	12	2	-	-	2855.295	V	1	35	-	-
2860.312	Hf II	15	30	-	-	2857.776	Ru	4	60	-	-	2855.24	Nd	5	-	-	-
2860.31	Lu	-	3	-	Me	2857.746	Cu II	-	4 h	Sh	-	2855.221	V I	50	1	-	-
2860.277	Ti I	7	-	-	-	2857.726	Pd II	-	100	-	-	2855.188	U	3	2	-	-
2860.257	Er	4	-	-	-	2857.68	Tb	5	3	m	-	2855.132	Ti I	2	-	-	-
2860.21	Fe	2	-	-	-	2857.65	W	1	7	-	-	2855.082	Cb	-	4	-	-
2860.172	Dy	2	-	-	-	2857.650	Ru	2	1 wh	-	-	2855.073	Cr	4	100	-	-
2860.163	W	5	9	-	-	2857.650	Hf II	20	20	-	-	2855.07	Se	-	[5]	Bl	-
2860.13	Tm	15	20	-	Me	2857.537	Os	5	5	-	-	2854.95	Tb	5	3 h	m	-
2860.063	Os	25	10	-	-	2857.494	Th	5	3	-	-	2854.920	Th	4	4	-	-
2860.016	Ru I	60	12	-	-	2857.474	U	8	6	-	-	2854.917	U	8	6	-	-
2859.971	V I	50	10	-	-	2857.445	W II	-	3	-	-	2854.89	Tm	5	20	Me	-
2859.963	Cb	-	3	-	-	2857.436	Re	15	-	-	-	2854.883	Ce	25 s	-	-	-
2859.89	O	-	[5 d]	-	Mh	2857.415	Fe II	-	10	-	-	2854.870	Ru	2	15	-	-
2859.858	W	4	2	-	-	2857.402	Cr II	20	80	-	-	2854.869	Mo	5	-	-	-
2859.814	Er	25	10	-	-	2857.362	Cb	-	5	-	-	2854.805	Mn	5	-	-	-
2859.806	U	3	4	-	-	2857.293	Cb	4	3	-	-	2854.722	Ru	2	60	-	-
2859.80	Yb	18	30	-	-	2857.282	Ta	60	5	-	-	2854.71	W	1	9	-	-
2859.785	Rh	6	-	-	-	2857.26	Ag	2 h	1 h	Fn	-	2854.667	Ce	30 s	-	-	-
2859.778	W	4	2	-	-	2857.220	Ru	-	25	-	-	2854.581	Pd II	4	500 h	-	-
2859.757	La II	1	5	-	-	2857.19	Tb	-	10	Ex	-	2854.53	Xe II	-	[30]	Hu	-
2859.737	U	6	10 h	-	-	2857.172	Fe II	-	30	-	-	2854.491	Ce	5	-	-	-
2859.727	Dy	2	-	-	-	2857.132	W	10	10	-	-	2854.49	Yb	1	8	Mo	-
2859.667	Eu II	40	-	-	-	2857.125	U	4 h	2 Wh	-	-	2854.46	W	-	4 s	-	-
2859.659	Co I	40	-	-	-	2856.98	Hf II	2	1	-	-	2854.458	U	3	2 h	-	-
2859.615	Rh	6	-	-	-	2856.976	Ce	3	-	-	-	2854.45	Cs	-	[8]	Bs	-
2859.608	Zr II	-	10 wh	-	-	2856.969	Hg I	20	10	-	-	2854.427	Zr II	5	5	-	-
2859.521	Ce	10	-	-	-	2856.96	P	-	[5]	Gu	-	2854.420	Yt II	10	18	-	-
2859.482	W	3	15	-	-	2856.941	Ir I	10	2 h	-	-	2854.336	V	20	100 R	-	-
2859.481	Na II	2	[40]	-	Fr	2856.937	Ce	6	-	-	-	2854.196	U	8 h	4 h	-	-
2859.48	Fe	2	-	-	-	2856.928	Fe II	-	15 h	Do	-	2854.168	Cb	5	4	-	-
2859.435	Cb	-	3	-	-	2856.91	Au	-	20	-	-	2854.16	Tb	5	3 h	m	-
2859.385	Er	6	6	-	-	2856.880	Mo	1	6	-	-	2854.155	I	-	[30]	Ke	-
2859.38	Yb	2	20	-	-	2856.831	Ce	3	-	-	-	2854.131	Th	8	8	-	-
2859.38	Te	-	[5]	-	Bl	2856.78	O	-	[10 h]	Mh	-	2854.12	Yb	2	10	-	-
2859.36	Ca	-	2	-	Ad	2856.766	Cr II	20	60	-	-	2854.111	Mo	-	10	-	-
2859.32	Cs	-	[20]	-	Bs	2856.674	Ce	2	3	-	-	2854.074	Ru I	60	35	-	-
2859.32	Sc II	7 d	5 wh	-	Me	2856.620	Ti II	3	8	-	-	2854.029	V I	2	-	-	-
2859.316	Pd II	-	15	-	-	2856.552	Ru	-	50	-	-	2853.95	K	-	[5]	S	-
2859.290	U	5	8	-	-	2856.492	U	5	4	-	-	2853.933	Ti II	12	40	-	-
2859.115	Mo	3	-	-	-	2856.473	Ce	4	-	-	-	2853.86	Ti II	-	[2]	El	-
2859.062	Ce	3	-	-	-	2856.45	Cd II	-	[8]	Vs	-	2853.835	W	9	3	-	-
2859.038	Cb	1	50	-	-	2856.42	Dy	2	-	-	-	2853.819	V I	6	-	-	-
2859.024	Ir	4	-	-	-	2856.394	Ce	6	-	-	-	2853.774	Fe	15	7	-	-
2858.995	Mo	-	15	-	-	2856.390	Fe II	-	5 h	-	-	2853.762	V	-	6	-	-
2858.977	V I	40	20	-	-	2856.294	Yt II	8	15	-	-	2853.72	La II	-	4 h	Me	-
2858.911	Cr II	50	80 Wh	-	-	2856.24	Ti II	-	100 wh	Ex	-	2853.688	Fe I	15	7	-	-
2858.903	U	35	25	-	-	2856.22	U	8	2	-	-	2853.658	Pd II	-	5 wh	-	-
2858.897	Fe I	100	30	-	-	2856.180	U	3	2	-	-	2853.584	Mo	1	25	-	-
2858.762	V I	20	2 h	-	-	2856.164	Rh I	60	30 h	-	-	2853.569	U	15	10	-	-
2858.74	In I	-	[30]	-	Sy	2856.136	Fe II	1	40	-	-	2853.556	V I	7	-	-	-
2858.740	W	7	6	-	-	2856.089	Ti	3	-	-	-	2853.519	Cb	1	10	-	-
2858.734	Cu I	30	2 h	-	IBu	2856.065	Zr II	2	4 hl	-	-	2853.486	W	12	15 h	-	-
2858.716	Ce	2	-	-	-	2856.05	Fe	2	-	-	-	2853.435	Ti I	3	-	-	-
2858.661	Hf II	5	4	-	-	2856.047	Ru	6	1	-	-	2853.424	U	12	12	-	-
2858.659	Mn	50	-	-	-	2856.046	Ce	3	-	-	-	2853.40	Yb	-	4	Me	-
2858.654	Cr II	18	30	-	-	2856.027	W	10 s	9	-	-	2853.384	Pt	2	-	-	-
2858.558	Er	10	2	-	-	2855.995	Mo	2	25	-	-	2853.326	Ru	2	8	-	-
2858.472	Ce	2	-	-	-	2855.960	U	4	2	-	-	2853.314	Ir I	8	-	-	-
2858.45	Yb	-	4	-	Me	2855.929	Ir I	10	-	-	-	2853.229	Mo	25	100 h	-	-
2858.435	Ta	100	300	-	-	2855.91	Fe	2	-	-	-	2853.22	W	-	4	-	-
2858.420	W	9	7	-	-	2855.902	La II	3	50 hl	-	-	2853.218	Cr	5	100 R	-	-
2858.412	Ti II	10	20	-	-	2855.900	Th	10	8	-	-	2853.204	Fe II	-	10	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2853.19	Tb	-	20	Ex	2850.11	Fe	2	-	-	2847.36	Kr II	-	[25 h]	Me
2853.107	Pt I	15	2	-	2850.043	Co I	75	-	-	2847.358	Th	10	10	-
2853.031	Na I	80 R	15	Fl	2849.983	U	5	8 h	-	2847.355	W	10	12	-
2852.958	Fe I	6	2	m	2849.838	Cr II	80	150 r	-	2847.340	U	15	4	-
2852.950	Ta	5	15	-	2849.823	Ta	15 Ws	50 W	-	2847.291	Ta	2	2	-
2852.935	U	3	6	-	2849.80	Tl II	-	[200]	El	2847.24	Yb	-	30 h	-
2852.909	W	8	9	-	2849.725	Ir I	40 h	20 h	-	2847.237	Cb	1	10	-
2852.866	V I	60	7 h	-	2849.70	I	-	[4]	Bl	2847.236	Ce	3	-	-
2852.857	Re	30 w	-	-	2849.66	Xe	-	[4]	Hu	2847.221	Fe II	-	3	-
2852.846	I	-	[4]	Ke	2849.606	Fe II	-	50	-	2847.19	Cs	-	[2]	Bs
2852.828	Na I	100 R	20	Fl	2849.565	Ru	-	18	-	2847.17	Yb	4	-	-
2852.750	U	15	15 h	-	2849.557	Cb	2 w	100 w	-	2847.13	Sb	-	[3]	Lg
2852.56	Eu	5 W	-	-	2849.549	Ta	5 h	1 h	-	2847.130	W	2	15	-
2852.54	Au II	-	5	-	2849.480	U	18	15	-	2847.09	Au II	-	25	-
2852.536	V	6	35	-	2849.465	W	7	6	-	2847.018	Er	3	-	-
2852.53	Ag	1	5 wh	Fn	2849.42	Ag	-	2 h	-	2847.005	Ce	3	-	-
2852.502	Th	2 h	6	-	2849.381	Mo	50	5	-	2847.00	Mg	8	8	m
2852.479	Ir	2	-	-	2849.343	Rh	3	-	-	2846.988	I	-	[15]	Ke
2852.469	U	6	4	-	2849.34	Yb	-	4	-	2846.976	Re	30 w	-	-
2852.42	Hg	-	[8]	Ps	2849.302	Os	8	4	-	2846.827	U	4	2	-
2852.415	Cs II	-	[2]	Ot	2849.289	Ru	3	100	-	2846.825	Fe I	20	12	-
2852.399	Re	10	-	-	2849.287	Cr	35	30	-	2846.762	Pd II	-	15	-
2852.39	Xe	-	[2 h]	Hu	2849.208	Hf II	30	100	-	2846.750	Ta	150 hs	10 h	-
2852.355	Ta	5	100 l	-	2849.198	Ce	2	-	-	2846.75	Mg I	18	4	-
2852.35	Fe	2	-	-	2849.19	Fe	2	-	-	2846.749	Ru	3	-	-
2852.237	Ce	3	-	-	2849.175	V I	25	-	-	2846.70	Cr	1	12	-
2852.131	Mo	10 h	10	-	2849.16	U	5 h	8 h	-	2846.69	La II	-	5	-
2852.131	Ir	20	-	-	2849.10	Ho	10	20	Ex	2846.646	Ir I	10	-	-
2852.13	Fe	150	80	-	2849.050	V	7	50	-	2846.620	Mo	1	10	-
2852.129	Mg I	300 R	100 R	-	2849.046	Os	15	5	-	2846.615	U	6	4	-
2852.129	Dy	5	-	-	2849.033	Ce	15	-	-	2846.58	Nd	5	-	-
2852.124	Ce	50 d	1	-	2848.97	Tb	-	10	Ex	2846.573	V	50	20 h	-
2852.10	W	1 d	18 h	-	2848.91	O	-	[30]	Mh	2846.554	Os	12	5	-
2852.012	Hf II	20	50	-	2848.909	Fe II	1	8	-	2846.48	Xe	-	[8 h]	Hu
2851.977	Cb	4	5	-	2848.898	U	8	6	-	2846.478	Cu I	8	-	-
2851.967	Zr II	12	20	-	2848.87	Tm	10	15	Me	2846.478	Re	3	-	-
2851.798	Fe I	200	150	S	2848.819	Ce	2	-	-	2846.44	Sn II	-	3	-
2851.748	V	30	4	-	2848.774	V I	20	2	-	2846.437	Cr	2	25	-
2851.65	Mg I	25	-	Fl	2848.718	Fe I	60	30	-	2846.40	Hf	-	3	Me
2851.598	Ce	3	-	-	2848.715	Cu II	-	2	-	2846.391	Os	40	10	-
2851.50	Fe	5	2	-	2848.614	U	4	2	-	2846.38	W	6 d	1	-
2851.447	Cb	5	3	-	2848.579	Ru	50	3	-	2846.373	U	0	6	-
2851.445	Th	5 d	5 d	-	2848.525	Ta	300	50	-	2846.363	Ce	2	-	-
2851.410	Ir	8	-	-	2848.525	Cu	-	2	-	2846.316	Ru	12	1	-
2851.356	Cr	20	80	-	2848.523	Zr I	100	-	-	2846.285	Cb	10	50	-
2851.295	Cb	-	5	-	2848.522	Ta	10	5	-	2846.265	Ce	4	-	-
2851.29	I	-	[12]	Bl	2848.441	Ir	2	-	-	2846.265	Er	5	2 h	-
2851.261	Th	10 d	10 d	-	2848.44	Yb	2	15	-	2846.193	Cs II	-	[2]	Ot
2851.254	V	2	15	-	2848.42	Mg I	20	-	-	2846.15	Br	-	[7]	Bl
2851.23	Cs	-	[20]	Bs	2848.415	Nd	-	5	-	2846.14	Yb	-	[25]	Bl
2851.206	Hf II	25	50	-	2848.40	Cr	6	30	-	2846.092	U	2	1	-
2851.179	Mo	15	-	-	2848.381	Mo	5	-	-	2846.092	Ti II	-	70 wh	-
2851.12	Yb	10	50	-	2848.37	Mg	-	3	-	2846.023	Cr	25	4	-
2851.112	Sb	50	45	-	2848.37	Co II	-	60 h	-	2845.959	U	6	4	-
2851.102	Ti II	20	80	-	2848.368	Er	10	4	-	2845.95	Fe	4	-	-
2851.035	Ir I	2	-	-	2848.34	La II	2	6	-	2845.92	Xe	-	[4]	Hu
2850.985	Ta	400	150	-	2848.332	Fe II	-	5 h	Do	2845.866	Er	8	1	-
2850.977	Re I	40	-	-	2848.295	Cb	2	10	-	2845.844	Ta	30	10 h	-
2850.960	Hf	25	5	-	2848.247	Os	30	15	-	2845.84	O	-	[10 h]	Mh
2850.951	Co I	30	-	-	2848.232	Mo II	125	200 h	-	2845.828	Hf	25	5	-
2850.95	Xe II	-	[3]	Hu	2848.192	Zr II	12	12	-	2845.805	Ce	2	-	-
2850.898	Mo	10	-	-	2848.173	U	5	2	-	2845.802	Cb	3	10	-
2850.820	U	6	6	-	2848.122	Fe II	-	10	Do	2845.753	Rh	8	4	-
2850.800	W	12	12	-	2848.079	Ce	2	-	-	2845.751	Ce	4	-	-
2850.787	Mo	20	-	-	2848.054	Ta	150	15	-	2845.714	Fe I	8	3	-
2850.785	Ir	-	5 h	-	2848.051	U	8	8	-	2845.67	Cs	-	[20]	Bs
2850.768	V	10	30	-	2848.046	Fe II	-	70	-	2845.647	Mo	-	10	-
2850.762	Os	75	25	-	2848.026	W	15	12	-	2845.64	Ho	-	70 h	Ex
2850.73	Pd II	-	5 wh	Bx	2848.017	Cb	1	8	-	2845.63	Co II	-	50	-
2850.709	Cr	-	6	-	2847.83	Hg I	15	100	Cn	2845.597	U	6	4	-
2850.686	V	10	25	-	2847.823	W	9	12	-	2845.595	Fe I	125	7	-
2850.681	Ru	-	12	-	2847.81	A II	-	[5]	Rt	2845.544	Fe	125	7	-
2850.674	Mo	1	40	-	2847.748	Re	3	-	-	2845.524	Ru	8	-	-
2850.65	Yt	3	8	-	2847.720	U	5	4 h	-	2845.52	Fe	-	[10]	Ok
2850.618	Sn	80	100 wh	-	2847.718	I	-	[15]	Ke	2845.48	Ge II	-	12	-
2850.6	bh B	50	-	L	2847.689	Ce	4	-	-	2845.452	Ce	10	-	-
2850.491	Ta	200	100	-	2847.683	Mo	-	6	-	2845.450	Fe II	-	6	Do
2850.487	U	8	12	-	2847.67	Hg II	-	[300]	Ps	2845.450	Ta	8 h	2	-
2850.4	Cs	-	[2]	Bs	2847.598	Ru	-	5	-	2845.385	Fe II	-	3	-
2850.390	W	9	7	-	2847.59	Cl	-	[5]	An	2845.357	Ce	4 W	-	-
2850.381	Cb	1	5	-	2847.572	V	15	150	-	2845.353	Ta	150	10	-
2850.293	Cr	-	5	-	2847.51	Lu	40	125	Me	2845.35	Tm	2	10	Me
2850.279	Re	2	-	-	2847.50	Ho	-	40	Ex	2845.298	U	3	4	-
2850.254	Ir I	5	-	-	2847.48	Ca	-	4	Ad	2845.245	V	18	80	-
2850.148	Hf II	20	20	-	2847.41	S	-	[8]	Bl	2845.210	Ru	-	4	-

2845.2—2837.2 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2845.2	Pb II	—	[2]	Ea	2842.420	Ni II	—	150	—	2839.80	Ti II	—	100 wh	Ex
2845.180	Ce	2	—	—	2842.383	Co I	30	—	—	2839.80	Cb	2	5	—
2845.13	Lu	30 h	2	Me	2842.369	Mo	10	—	—	2839.778	Ta	8	2	—
2844.991	U	18	8	—	2842.35	Si I	3	—	Ks	2839.69	Nd	—	5	—
2844.973	Fe II	—	5	Do	2842.289	V	—	9 h	Me	2839.651	U	5	4	—
2844.926	V I	9	—	—	2842.283	Ir I	12	2	—	2839.598	Cb	—	10 h	—
2844.914	W	10	12	—	2842.240	U	5	8 h	—	2839.585	Mo	25	1	—
2844.882	Ce	2	—	—	2842.195	Ce	2	—	—	2839.561	Ce	5	—	—
2844.852	Ir	5	—	Ab	2842.151	Mo	2	40	—	2839.555	Na II	2	[20]	Fr
2844.835	V	—	10	—	2842.126	Rh	15	—	—	2839.529	Fe II	4	25	—
2844.814	Mo	—	20	—	2842.1	Rn	—	[150]	Wo	2839.523	Ce	2	—	—
2844.760	Ce	5	—	—	2842.088	U	15	12	—	2839.437	V I	12	7	—
2844.757	Ta	150	30	—	2842.086	Mn	12 Wh	—	—	2839.374	Ru	—	6	—
2844.75	Yb	—	2 h	—	2842.076	Fe II	2	5	—	2839.364	Ce	18	—	—
2844.727	Ce	5	—	—	2842.075	Ce	2	—	—	2839.339	Zr II	7	6	—
2844.711	Ru	—	150	—	2842.041	V	1	7	—	2839.337	W	10 s	10	—
2844.680	Os	15	5	—	2842.04	Ho	—	10	Ex	2839.335	Th	5	4	—
2844.67	Tm	40	15	Me	2842.030	Pt	1	10	—	2839.33	In	—	2	Cx
2844.579	Zr II	50	50	—	2842.021	Cb	3	2	—	2839.245	Ir I	12	—	—
2844.54	Eu	2	—	—	2842.02	Te	—	[2]	Bl	2839.243	Th	8	6	—
2844.516	U	2	12 h	—	2841.97	Pr	—	8	—	2839.235	Ce	3	—	—
2844.51	In	—	2	Cx	2841.95	Hf	—	5 wh	Me	2839.235	Cr	—	20	—
2844.495	W	—	8	—	2841.938	Ti II	40	125	—	2839.20	Kr II	—	[2]	Me
2844.48	Cs	—	[2]	Bs	2841.895	Er	5	—	—	2839.186	Fe	6	—	—
2844.463	Ta	200	200 l	—	2841.81	Xe	—	[2 hs]	Hu	2839.164	Mo	—	25	—
2844.46	Kr II	—	[20]	Me	2841.773	Mo	—	15	—	2839.158	Ir I	25	15	—
2844.45	Xe	—	[3]	Hu	2841.721	Na II	20	[80]	Fr	2839.11	Tm	10	6	Me
2844.435	Cb	2	10	—	2841.72	I	—	[20]	Bl	2839.030	Ce	2	—	—
2844.396	Os	50	25	—	2841.715	Ce	10	—	—	2839.02	Te	—	[10]	Bl
2844.390	Mo	30	5	—	2841.691	Ir I	7	2	—	2838.958	Ni I	25	—	—
2844.37	Cl	—	[3]	An	2841.677	Ru	50	200	—	2838.945	Ce	2	—	—
2844.311	Ce	5	—	—	2841.60	Cd	—	[5]	Es	2838.94	Tm	15	40	Me
2844.251	Ta	400 r	50	—	2841.570	W	12	12	—	2838.890	W	10	6	—
2844.224	V	—	12 h	—	2841.5	Cs	—	[2]	Bs	2838.87	In	—	6	Sq
2844.18	Ho	—	10 h	Ex	2841.492	Hf	10	—	—	2838.857	Ce	2	—	—
2844.165	Re	25	—	—	2841.486	Ce	8	—	—	2838.846	Ru	—	10	—
2844.12	A II	—	[5]	Rt	2841.359	U	4	4	—	2838.810	Ce	2	—	—
2844.09	Ti II	—	3 wh	—	2841.343	Er	5	—	—	2838.79	Kr II	—	[20]	Me
2843.979	Fe I	300	300	—	2841.335	Gd	4	4	—	2838.786	Cr	3	80	—
2843.97	Eu	20 w	—	—	2841.18	Te	—	[30]	Bl	2838.72	Tb	3	20	m
2843.95	Ag	5	2	—	2841.17	U	5	4	—	2838.714	Er	15	3	—
2843.923	Fe I	2	—	—	2841.168	Th	8	8	—	2838.702	Nd	—	5 h	—
2843.821	V	—	15 h	Me	2841.153	Ce	3	—	—	2838.674	W	10	5	—
2843.82	Yb	—	2 h	—	2841.146	Cb	10	100	—	2838.65	Yb	—	2	—
2843.778	W	9	8	—	2841.125	Ru	—	125	—	2838.626	Os I	100 R	100	—
2843.728	Mo	1	8	—	2841.11	W	2	10	—	2838.623	U	6	12	—
2843.69	Br	—	[2]	Bl	2841.039	V	15	35	—	2838.621	Ru	30	—	—
2843.659	La II	4	4	—	2841.029	Pd II	—	100	—	2838.535	V	—	10	—
2843.637	Cb	3	10	—	2840.96	Yt II	7	18	—	2838.5	Rn	—	[70]	Pe
2843.632	Fe I	125	100	—	2840.936	Cb	5	2	—	2838.45	Fe I	8	5	—
2843.516	Zr II	8	8	—	2840.932	Fe	7	3	—	2838.438	La II	2	5	—
2843.51	Ta	3	80	—	2840.830	Er	9	2	—	2838.24	Ta	2	150	—
2843.484	Fe II	—	3	—	2840.762	Fe II	—	35	—	2838.235	Fe II	—	8	Do
2843.39	Ho	—	10 h	Ex	2840.736	W	5	4 d	—	2838.204	U	3	2	—
2843.37	A	—	[2]	Rt	2840.686	Ce	5	—	—	2838.173	Os	30	12	—
2843.319	Fe II	—	3	—	2840.66	Pb II	—	20	—	2838.120	Fe I	150	150	S
2843.27	Ti I	5	—	Fl	2840.647	Fe II	—	70	—	2838.120	Re	8	—	—
2843.252	Cr II	125	400 r	—	2840.623	U	5	4	—	2838.09	Cs	—	[20]	Bs
2843.24	Fe	6	2	—	2840.599	V	2	12	—	2838.058	V I	7	2	—
2843.171	Ru I	30	3	—	2840.539	Ru	60	8	—	2838.03	Au	—	80	—
2843.001	Re I	30	—	—	2840.50	La II	3	25 hl	—	2838.022	Zr I	3	1	—
2843.0	Rn	—	[3]	Pe	2840.466	U	3	2	—	2837.994	Ce	8	—	—
2843.00	Yb	5	5	—	2840.438	Cr	—	6	—	2837.95	Al	—	[8]	Sy
2842.93	Fe	5	2	—	2840.423	Fe I	125	20	—	2837.942	Ta	30	30	—
2842.924	Ce	3	—	—	2840.39	Ta	2	50	—	2837.901	Mo	15	—	—
2842.908	Mo	4	—	—	2840.348	Re I	40	—	—	2837.896	Ce	10	—	—
2842.869	U	4	6 h	—	2840.342	Fe II	—	8	—	2837.877	Cr	2	35	—
2842.830	Ce	25 d	—	—	2840.236	Gd	50	60	—	2837.762	W	10	10 s	—
2842.82	Eu	2	1 h	—	2840.220	W	9	4	—	2837.76	Ag II	—	5	—
2842.815	Ta	200	50	—	2840.219	Ir I	15	10	—	2837.726	U	6	6 h	—
2842.815	Th	12	10	—	2840.156	Ce	3	—	—	2837.655	Pd II	—	10 wh	—
2842.767	Cr	—	12	—	2840.156	Th	8	6	—	2837.613	Dy	2	—	—
2842.755	Ru	20	—	—	2840.106	V	2	25	—	2837.602	C II	—	40	Fl
2842.692	V	1	12	—	2840.097	W	9	2	—	2837.598	Ce	8	—	—
2842.673	Fe II	—	1 h	—	2840.05	Al	—	[15]	Sy	2837.549	Re	40	—	—
2842.648	Cb	10	100	—	2840.021	Cr	25	125	—	2837.547	Cu II	—	250	—
2842.58	Yb	—	2	—	2840.001	Mn	20	—	—	2837.51	Nd	5	—	—
2842.57	Ne I	—	[15]	Ps	2839.989	Sn I	300 R	300 R	—	2837.422	Os	25	10	—
2842.565	W	10	1	—	2839.980	In	—	2	—	2837.344	W	12	10 s	—
2842.533	Ru	30	—	—	2839.92	W	—	10	—	2837.328	U	10	8	—
2842.519	Ce	10	—	—	2839.892	Pd II	—	100	—	2837.327	Ir I	20	10	—
2842.484	U	8	6	—	2839.890	U	18	20	—	2837.320	Mo	5 h	1	—
2842.48	Se	—	[5]	Bl	2839.85	Tm	5	10	Me	2837.311	Sb	—	3	Sp
2842.457	Mo	3	30	—	2839.819	Fe II	—	10 h	Do	2837.299	Fe II	—	25	—
2842.428	Cr	—	8	—	2839.810	W II	1	10	—	2837.299	Th	15	10	—

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2837.293	Sc	4 h	7	2834.97	Yb	2	8	2832.46	Cr	2	125
2837.289	Ce	50 a	-	2834.939	Co II	-	75	2832.46	Xe	-	[2 h] Hu
2837.274	Ru	20	-	2834.902	Ce	2	-	2832.436	Fe I	300	200 S
2837.232	Zr I	100	-	2834.882	V	12	-	2832.39	Kr II	-	[2] Me
2837.230	Pt I	2	-	2834.780	Mo	15	10	2832.34	Sc	3	- Me
2837.21	Se	-	[35]	2834.760	Ti I	6	-	2832.319	Th	18	25
2837.187	U	10	8	2834.755	Fe	15	10	2832.307	Ce	18	-
2837.151	Co I	75 r	-	2834.744	Ce	6	-	2832.26	Ti I	2	-
2837.12	Pd II	-	[40]	2834.743	U	5 h	4 h	2832.20	Nd	5	-
2837.106	Er	5	-	2834.713	Pt I	80	5	2832.20	Yb	-	2
2837.10	Nd	5	-	2834.615	Re I	30	-	2832.160	Ti II	25	100
2837.03	Fe	1	2	2834.57	Yt II	2	18	2832.073	Mo	1	20
2837.015	Re	2 h	-	2834.553	Ni I	40	15	2832.063	U	35	50
2836.994	Dy	2 h	-	2834.551	U	8	4 h	2831.956	Mo	2	8
2836.965	Mo	8	-	2834.53	V	-	40 h	2831.843	Ru	10	50
2836.955	Gd	2	-	2834.484	Th	7	5	2831.833	W	5	10
2836.922	I	-	[40]	2834.474	Ce	5	-	2831.811	Ir I	6	5
2836.919	In I	80	80	2834.428	Co I	50	-	2831.794	Er	3	-
2836.918	U	5	10 h	2834.41	Fe I	3	2	2831.77	Ge II	-	8
2836.907	Cd I	200	80	2834.408	Ta	1	8	2831.67	Ba	1	20 Py
2836.87	Ga	-	2	2834.395	Zr II	4	4	2831.647	Ce	3	-
2836.716	Fe II	-	20	2834.394	Mo	20	40	2831.60	V	-	12 h
2836.710	C II	-	200	2834.35	Lu	5	40 h	2831.60	Ho	-	70 Ex
2836.705	Mo	1	25 h	2834.262	Cr	-	125	2831.562	Fe II	1	500
2836.698	V I	10	-	2834.212	W II	-	30	2831.56	Tm	10	40 Me
2836.690	Rh I	60	-	2834.211	U	4 h	2	2831.558	Pt II	-	3
2836.67	Hg	-	5	2834.19	Cd II	-	[100]	2831.540	In II	-	[18] Ps
2836.64	Ti II	-	100 wh	2834.18	Fe	5	3	2831.534	U	3	2
2836.618	Ta	80 r	2	2834.161	Ti II	-	8 wh	2831.48	Te	-	[10] Bi
2836.612	Ti I	5	2	2834.146	W	10	-	2831.441	Mo	1 h	30
2836.573	Ru	30	1 h	2834.14	Ca	-	3	2831.406	Ti I	5	-
2836.520	V	20	80	2834.134	Hf	18	12	2831.40	Si	-	[5] Sy
2836.509	Fe II	3	12	2834.117	Rh I	70	30	2831.378	W	25	10
2836.494	Zr I	5	-	2834.099	Ce	2	-	2831.360	Ir I	7	2
2836.479	Cr	3	20	2834.060	Re	100 r	-	2831.37	Zr I	4	-
2836.46	Ra II	-	[25]	2834.001	Ru	30	5	2831.324	U	8	4
2836.438	Th	5	2	2833.923	Co I	40	-	2831.26	As II	-	8 Ro
2836.412	Ti I	4	-	2833.910	Er	5	2 h	2831.237	W II	2	12
2836.404	Ir I	25	10	2833.908	Zr II	2	5	2831.169	U	6	4
2836.35	O II	-	[5]	2833.821	U	15	25	2831.036	Cr	15	1
2836.322	Fe	8	5	2833.82	Tm	7	10	2830.98	Yb	2	40
2836.313	Mn	15	-	2833.792	Mo	1	8	2830.964	Fe	10	-
2836.3	Rn	-	[25]	2833.784	Ru	-	80	2830.962	V	-	6 h
2836.295	Mo	2	10	2833.753	Gd	20	20	2830.899	Ce	30	-
2836.27	Br	-	[2]	2833.671	Ir	3	-	2830.864	Ir I	3	-
2836.259	Ta	2	-	2833.64	Au	-	3	2830.836	Cb	-	5
2836.252	W	10	10 s	2833.636	Ta	300 w	40 w	2830.834	Re	2 h	-
2836.241	Cb	3	5	2833.628	W	15	12	2830.794	Mn	50	-
2836.2	K	-	[10]	2833.580	Ce	2	-	2830.79	Ho	-	10 hd Ex
2836.188	Fe II	3	10	2833.40	Fe	10	8	2830.744	Ir I	4	- Ab
2836.147	Ru	20	-	2833.393	Cr	-	3	2830.73	I	-	[15] Bi
2836.11	Tb	-	20	2833.37	Tb	-	20	2830.703	Ru	20	-
2836.100	Ti I	5	-	2833.339	Th	8	8	2830.6	Rn	-	[70] Wo
2836.097	Ir I	5	1	2833.31	Ti II	-	[25]	2830.571	Cb	1	30
2836.049	Th	10	8	2833.309	Ce	50 d	-	2830.509	Ir I	8	5
2836.039	Ce	6	-	2833.304	Cb	1	10	2830.468	Cr	15	80 h
2836.028	Mo	8	-	2833.276	Hf	25	4	2830.45	As II	-	25 Ro
2835.955	Fe I	15	10	2833.25	Eu	10 w	5 wh	2830.445	Th	10	8
2835.95	In	-	3	2833.244	U	8	4	2830.431	Ce	3	-
2835.914	Mo	15	-	2833.236	Ir	7	20	2830.43	Kr II	-	[3 hl] Me
2835.89	Au	-	10	2833.14	K	2 h	[2]	2830.416	Er	7	2
2835.803	U	8	10	2833.100	Fe II	-	5 h	2830.402	V	10	60
2835.800	Ce	2	-	2833.069	Pb I	500 R	80 R	2830.341	Ce	2	-
2835.656	Ir I	12	-	2833.061	Er	25	-	2830.309	U	6	2
2835.65	Nd	5	-	2833.061	Zr	2	1	2830.295	Pt I	1000 R	600 r
2835.643	Ti I	8	6	2833.06	In	-	3	2830.288	W	10	3
2835.636	W	12	10	2833.056	Eu	3	-	2830.27	Au II	-	2
2835.635	V I	12	2	2833.044	Ce	3	-	2830.19	Ga	-	2 Kl
2835.633	Cr II	100	400 r	2833.03	Cl	-	[4]	2830.168	Ir I	12	-
2835.604	Ce	10	-	2833.00	Kr II	-	[100]	2830.10	W	4	20 l
2835.572	U	5	6	2832.952	W	10	3	2830.091	Re	3 h	-
2835.459	Fe I	100	100	2832.95	Zn	-	[25]	2830.075	U	8	4 h
2835.43	Au	-	8	2832.928	Ce	2	-	2830.06	Ag	2	1 h
2835.393	Ce	2	-	2832.921	Ne I	-	[8]	2830.045	Ti I	8	-
2835.35	Kr II	-	[8 hl]	2832.917	I	-	[20]	2830.018	Ta	20	1
2835.347	V	1	10	2832.790	Cb	-	5 h	2829.942	Mo	25	5
2835.331	Mo	20	40	2832.774	Ir	5	-	2829.936	Th	6	6
2835.305	Ir I	2	-	2832.769	Rh I	5	-	2829.877	Re	3 h	-
2835.25	Lu	-	10 hd	2832.753	Ce	2	-	2829.854	Na II	2	[5] Fr
2835.223	Ne I	-	[15]	2832.657	Mo	-	5	2829.825	W	15 l	10
2835.18	Hf II	1	3 h	2832.645	U	2	2	2829.820	U	6	4
2835.136	Dy	2	-	2832.625	Ru	20	-	2829.806	Zr I	9	-
2835.116	Cb	5 d	100	2832.568	Ce	2	-	2829.793	Mo	15	-
2835.01	Ca	-	[8]	2832.55	La II	4	5	2829.752	Cb	3	50
2834.99	Ho	-	10	2832.480	W	10	9	2829.618	Co	2	-

2829.6—2821.8 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2829.612	Ir I	5	-	-	2826.94	Xe	-	[10 wh]	Hu	2824.68	Th	-	25 d	-
2829.607	U	6	2	-	2826.92	V	-	10 h	-	2824.67	Fe	2 d	2 d	-
2829.556	Ce	4	-	-	2826.858	Th	12	12	-	2824.630	U	10	6	-
2829.423	Cs II	-	[2]	Ot	2826.82	Lu	-	6 hl	Me	2824.629	Ce	2	-	-
2829.42	Lu	-	3 h	Me	2826.805	Co I	50 W	-	-	2824.54	Eu	2 w	-	-
2829.373	Er	5	-	-	2826.802	Cs II	-	[2]	Ot	2824.537	Cr	-	10	-
2829.37	U	6	4	-	2826.800	I	-	[8]	Ke	2824.448	Ir I	20	15	-
2829.322	Hf II	15	30	-	2826.793	Sb	-	5 h	Sp	2824.441	V	2	15	-
2829.306	Rh I	30	-	-	2826.764	Re	3 h	-	-	2824.41	Pt	2	2	-
2829.300	Eu	20	10	-	2826.746	Cr	70	3	-	2824.370	Ag	150 wh	200 w	-
2829.269	Os	40	6	-	2826.746	Mo	15	1	-	2824.369	Cu I	1000	300	-
2829.247	Ce	2	-	-	2826.718	Mn	12 Wh	-	-	2824.364	Co I	2	-	-
2829.213	Pd II	-	2 h	-	2826.69	U	6	2	-	2824.322	Er	3	-	-
2829.160	Ru I	50	8	-	2826.677	Ru	-	100	-	2824.256	W II	1	8	-
2829.15	Ag II	3	3	-	2826.675	Rh I	100	50 d	-	2824.28	U	25	30	-
2829.081	Ru	-	5	-	2826.664	Sc II	10	25	-	2824.247	Re	20	-	-
2829.073	He I	-	[40]	Pa	2826.647	Ce	2	-	-	2824.19	Ho	20	3	Ex
2829.045	Cs II	-	[2]	Ot	2826.63	Ho	3	20 h	Ex	2824.172	Mo	-	3	-
2829.031	Mo	1	6	-	2826.547	U	8	2	-	2824.166	Os	20	4	-
2829.011	Ge I	8	5	-	2826.545	Mo	40	5	-	2824.15	I	-	[4]	Bl
2828.9	Ti II	-	150 wh	Ex	2826.5	Rn	-	[70]	Pe	2824.12	Cs	-	[8]	Bs
2828.90	U	18	20	-	2826.5	P	-	[20 hl]	Gu	2824.048	Ta	4	-	-
2828.813	Fe	100	60	-	2826.50	Fe	10	8	-	2824.034	Ce	15	-	-
2828.790	W	10	2	-	2826.499	Ce	5	-	-	2823.99	In	-	3	Sq
2828.789	Mo	10	1	-	2826.475	Cb	3	5	-	2823.95	Ag	-	3 h	-
2828.786	Cr	-	12	-	2826.44	Tm	10	25	Me	2823.881	Cb	1	10	-
2828.762	Mn	50 wh	-	-	2826.419	Ta	20	3	-	2823.710	W	12	5	-
2828.703	Ce	3	-	-	2826.407	Cr	-	6	-	2823.67	N II	-	[25]	Fl
2828.691	Eu	200 W	150	-	2826.385	Ti I	2	-	-	2823.647	Co	5 h	-	-
2828.681	Fe II	-	8	Do	2826.336	Pd II	-	2 wh	-	2823.57	Yb	-	3	-
2828.634	Fe II	-	80	-	2826.33	Yt II	7	12	-	2823.555	Th	2 h	4	-
2828.579	Ta	75	100	-	2826.220	Ru	-	80	-	2823.470	Ti I	3	-	-
2828.545	Nd	-	5	-	2826.219	Ir	3	-	Ab	2823.421	Ce	8	-	-
2828.517	Hf	-	2	-	2826.193	U	18	12 h	-	2823.370	Rh I	25	-	-
2828.51	I	-	[20]	Bl	2826.183	Ta	60	5	-	2823.327	Cb	1	5	-
2828.478	Co	15	-	-	2826.16	Ti I	200 R	100 R	Fl	2823.276	Fe I	200	300	S
2828.376	Dy	2	-	-	2826.151	Cr	-	12	-	2823.193	Re	25	-	-
2828.167	Cr	15	2	-	2826.13	Zn	3	[10]	Vs	2823.19	Cd II	-	[20]	Tk
2828.150	Ti II	2	200 h	-	2826.085	W	10	3	-	2823.189	Pb	150 R	40	-
2828.149	Hf II	3	1	-	2826.026	Fe II	-	25	-	2823.179	Ir I	12	5	-
2828.14	Ho	-	20 h	Ex	2826.00	Fe I	6	-	-	2823.178	U	2	2	-
2828.107	U	6	2	-	2825.994	Mo	15	4	-	2823.177	Ru	20	80	-
2828.068	Ti I	18	-	-	2825.867	V	7	70 h	-	2823.133	Nd	-	5	-
2828.039	Ce	8	-	-	2825.855	Cb	2	5	-	2823.03	Cs	-	[8]	Bs
2827.992	Th	5 d	4 d	-	2825.715	Ce	2	-	-	2823.03	Kr II	-	[2 h]	Me
2827.981	U	8	4	-	2825.7	K	-	[5]	MI	2822.99	P	-	[20 hl]	Gu
2827.958	Cr	-	8	-	2825.689	Fe I	70	60	-	2822.943	Pd II	-	5 wh	-
2827.92	Tm	50	100	Me	2825.671	Mo	25	1	-	2822.863	Mo	20	6	-
2827.91	Yb	-	2	-	2825.609	Ne I	-	[8]	Ps	2822.856	Rh I	8	-	-
2827.90	Xe	-	[4 h]	Hu	2825.56	Ca	-	2	-	2822.8	Rn	-	[3]	Wo
2827.900	Er	12	2	-	2825.560	Fe	150	150	-	2822.729	U	10	10	-
2827.895	Fe I	70	50	-	2825.558	Zr II	30	30	-	2822.72	Au	-	80	-
2827.869	Ru	30	12	-	2825.52	Sr II	-	[4 h]	Mc	2822.677	Hf II	30	90	-
2827.834	Re	6	-	-	2825.51	La II	5	5	Me	2822.63	Kr II	-	[5]	Me
2827.815	Sc II	5	-	-	2825.503	Ir I	8	1	-	2822.572	W II	12	30	-
2827.810	U	4	2	-	2825.490	Cr	1	20	-	2822.567	U	5	6	-
2827.743	Mo	8	40	-	2825.463	Ru	-	80	-	2822.561	Ir I	4	1	-
2827.654	Ce	5	-	-	2825.461	Re	20	-	-	2822.559	Yt II	3	6	-
2827.60	Fe	15	12	-	2825.45	Au	10	40	-	2822.552	Ru	30	150	-
2827.584	Ne I	-	[3]	Ps	2825.431	Dy	2	-	-	2822.550	Mn	12	1	-
2827.55	Ta	3 d	100 d	-	2825.400	Ti	15	-	-	2822.492	Pt II	2 h	15	-
2827.544	Zr I	3	-	-	2825.369	Yt II	7	10	-	2822.44	V	4	70 h	-
2827.528	Re	30	-	-	2825.347	U	5	2	-	2822.429	Mo	15	4	-
2827.522	Ru	5	8	-	2825.32	W	1	4	-	2822.409	Re I	10	-	-
2827.495	Zr II	5	3	-	2825.296	Ce	2	-	-	2822.373	Ta	10 h	-	-
2827.434	Fe II	-	25	-	2825.259	Ne I	-	[10]	Ps	2822.371	Cr	20	100	-
2827.38	Tb	3	10 h	m	2825.242	Co II	5	200	-	2822.366	Ce	6	-	-
2827.310	Rh I	50	-	-	2825.236	Ni II	-	125	-	2822.362	Th	4 d	2 d	-
2827.305	U	6	2	-	2825.183	Cb	5	3	-	2822.30	Cl	-	[10]	An
2827.282	W	10	12 l	-	2825.18	Eu	3	-	-	2822.270	Pt II	10	60 h	Sh
2827.26	Eu	12	6	-	2825.16	P	-	[5]	Gu	2822.198	U	2	2 h	-
2827.21	Ti II	-	80 wh	-	2825.151	Co I	75 w	-	-	2822.136	V	-	30 h	-
2827.20	Te	-	[15]	Bl	2825.073	Ti I	4	-	-	2822.131	Sc II	50	20	-
2827.176	Ta	200	10	-	2825.056	Ru	-	60	-	2822.124	Re	20	-	-
2827.172	Mo	-	5	-	2825.032	Ta	2	1 h	-	2822.035	Th	10 d	10 d	-
2827.163	Ir I	6	4	-	2825.025	V	-	20 h	-	2822.032	Ru	50	5	-
2827.149	W	9	4	-	2824.967	W	-	8	-	2822.029	Mo	15	20	-
2827.116	Cb	-	20	Me	2824.96	Yb	2	10	-	2822.017	Ce	5	-	-
2827.08	Fe	1	-	-	2824.880	Ce	10	-	-	2822.012	Cr	10	80	-
2827.077	Cb	8	50	-	2824.860	U	12	8	-	2821.990	Ta	12	4	-
2827.044	Ru	-	8	-	2824.836	I	-	[8]	Ke	2821.921	Cb	4	3	-
2827.02	Tm	20	50	Me	2824.821	Zr I	4	-	-	2821.88	Fe	2	1	-
2827.00	Rb	-	[5]	Ok	2824.809	Ta	60 W	5 h	-	2821.853	Pd II	-	10 wh	-
2826.995	U	8	10	-	2824.79	Ho	-	10 h	Ex	2821.834	Mo	1	25	-
2826.99	Cb	-	4 h	-	2824.772	Ru	10	-	-	2821.827	Ir	2	-	-

Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R
2821.745	Co II	30 h	10 h	-	2819.214	Cb	8	3	-	2816.936	Ir I	8	1	-
2821.682	Ce	6	-	-	2819.212	Ag	-	2 h	Fn	2816.90	U	4	6	-
2821.63	Fe	2	1	-	2819.21	I	-	[12 h]	Bl	2816.87	Kr II	-	[30]	Me
2821.610	Th	8	6	-	2819.202	U	3	2	-	2816.842	Cr	3	30	-
2821.57	Te	-	[5]	Bl	2819.174	Co I	10	-	-	2816.82	I	-	[4]	Ke
2821.558	Zr I	10	-	-	2819.08	Tm	6	10	Me	2816.81	Rb	-	[5]	Ok
2821.54	Ti I	7	-	-	2819.08	Ho	-	10 h	Ex	2816.740	U	8	8	-
2821.52	Se II	-	[20]	Bl	2819.05	W	2	15	-	2816.699	Cr	12	-	-
2821.473	Ce	8	-	-	2819.039	In II	-	[30]	Ps	2816.677	Cb	2	50	-
2821.452	Mn	40	-	-	2818.952	Ru I	50	3	-	2816.669	W	5	1	-
2821.424	Ru	5	100	-	2818.940	Hf	15	-	-	2816.66	Fe	5	4	-
2821.42	Ti II	-	70 wh	-	2818.932	In II	-	[10]	Ps	2816.56	Tm	2	10	Me
2821.311	W	10	6	-	2818.919	Mn	20	-	-	2816.52	O	-	[25]	Mh
2821.293	Ni I	125	125	-	2818.873	Pt II	1	10	-	2816.46	Kr II	-	[60]	Me
2821.251	Os	20	6	-	2818.852	Er	10	8	-	2816.417	U	3	6 h	-
2821.23	Lu	2	50 hl	Me	2818.849	Yt I	2	-	-	2816.395	Dy	5	2	-
2821.181	Ru	30	-	-	2818.815	Ru I	30	-	-	2816.38	Ho	-	10	Ex
2821.176	Ta	3	1	-	2818.771	Mn	25	-	-	2816.33	Yb	-	2	-
2821.15	I	-	[20]	Bl	2818.765	Ta	2	-	-	2816.33	Ca	-	3	Ed
2821.14	Yb	2	25	-	2818.75	Yb	-	80	Me	2816.329	Re	40	-	-
2821.122	V	7	40	-	2818.740	Cb	2	10	-	2816.324	Mn	1	2	-
2821.122	U	20	35	-	2818.739	Zr II	15	15	-	2816.18	Eu	50 w	50	-
2821.040	La II	1	5	-	2818.73	Cd I	10	10	-	2816.179	Al II	-	[15]	Sy
2821.01	Fe	5	3	-	2818.712	U	2	2	-	2816.154	Mo II	200	300 h	-
2820.836	Rh I	3	-	-	2818.70	Te	-	[25]	Bl	2816.076	Th	10	5	-
2820.824	Cr	20	1	-	2818.69	Ho	-	10 h	Ex	2816.07	Ba	-	30	Py
2820.809	Fe I	20	15	-	2818.597	Co I	30	-	-	2816.069	Hf II	10	6	-
2820.804	Cb	3	20	-	2818.535	U	3	4	-	2816.052	Ce	2	-	-
2820.77	Eu	200 W	200 W	-	2818.527	V	-	6 h	-	2815.985	U	8	6	-
2820.744	Ce	2	-	-	2818.48	Tm	30	20	Me	2815.968	V	12	-	-
2820.65	Te	-	[10]	Bl	2818.48	I	-	[15]	Bl	2815.908	Mo	20	-	-
2820.65	I	-	[12]	Bl	2818.473	Cr	15	-	-	2815.815	Hf	10	-	-
2820.633	Mo	8	-	-	2818.39	La II	-	3	-	2815.780	Os	40	4	-
2820.632	Ir I	4	-	-	2818.376	Ce	10	-	-	2815.757	U	6	8	-
2820.632	Al II	-	[3]	Sy	2818.361	Ru I	50	12	-	2815.642	Re	10	-	-
2820.555	Os	10	5	-	2818.359	Cr	80	-	-	2815.596	Mn	12 h	-	-
2820.507	U	2	2	-	2818.300	Mo	25	1	-	2815.559	Co I	50 r	-	-
2820.419	Hf II	10	5	-	2818.298	U	3	4 h	-	2815.547	Ti II	7	20	-
2820.365	Ti	8	15	-	2818.271	Na II	2	[5]	Fr	2815.545	V	1	12 h	-
2820.337	Th	10	6	-	2818.248	Pt	70	4	-	2815.542	Mo	10	-	-
2820.323	Ce	2	-	-	2818.199	Cb	-	10 W	Me	2815.54	Ag II	3	80 wh	-
2820.268	Cs II	-	[2]	Ot	2818.173	Ce	2	-	-	2815.54	Mg	3	8	-
2820.266	U	6	10	-	2818.15	Tm	5	20	Me	2815.507	Fe I	40	25	-
2820.224	Hf II	40	100	-	2818.14	Ho	-	10 h	Ex	2815.499	Zr I	10	-	-
2820.22	Fe	4	3	-	2818.060	W	15	20	-	2815.45	W	-	9 h	-
2820.186	Er	18	3	-	2818.04	Fe	4	3	-	2815.41	Br	-	[2]	Bl
2820.178	Os	12	5	-	2818.029	Ce	2 h	-	-	2815.399	Cb	-	12	Me
2820.10	Se	-	[15]	Bl	2817.98	Cs	-	[20]	Bs	2815.35	La II	2	6	-
2820.06	Xe II	-	[5 h]	Hu	2817.972	Mn	50	1	-	2815.33	Ca	-	[2]	Ba
2820.009	Co I	50	-	-	2817.959	U	18	30	-	2815.272	Os	8	3	-
2820.003	Mo	-	8	-	2817.949	Cr	-	20	-	2815.231	Dy	2	-	-
2820.0	Hg	10 h	20 h	Cn	2817.938	Fe I	4	3	-	2815.207	U	2	2	-
2820.00	Ti II	-	70 wh	-	2817.9	Rn	-	[12]	Pe	2815.150	U	2	4	-
2819.955	Re I	150 W	-	-	2817.866	Ti II	10	200	-	2815.123	Ta	100	2	-
2819.95	Au	-	150	-	2817.837	Ti I	3 h	1 h	-	2815.032	V	2	9	-
2819.905	Fe	-	3 h	-	2817.875	Hf	18	1	-	2815.018	Mn	25	75	-
2819.894	Cb	-	10 wh	-	2817.669	Mn	15	-	-	2815.016	Fe	15	8	-
2819.89	Tb	3	20	Ex	2817.658	U	5	4	-	2815.011	Ta	150	15	-
2819.89	Cd II	-	[3]	Vs	2817.570	Cr	-	15	-	2814.997	Ce	3	-	-
2819.835	U	6	25	-	2817.566	Ru	-	20	-	2814.993	Mo	-	3	-
2819.815	Er	6	2	-	2817.56	I	-	[12]	Bl	2814.981	Co I	25	-	-
2819.8	Rn	-	[12]	Pe	2817.56	S	-	[15]	Bl	2814.955	Ce	20	-	-
2819.74	Ho	-	10 h	Ex	2817.508	Fe I	100	60	-	2814.93	Hg II	-	[200]	Ps
2819.738	Hf	20	1	-	2817.503	Ta	80 l	10	-	2814.905	Zr I	70	1	-
2819.73	La II	-	2	-	2817.500	V	18	50	-	2814.899	V	7	25	-
2819.728	Mn	10	-	-	2817.500	Mo	15	25	-	2814.877	Ir I	5	1	-
2819.64	Nd	5 h	-	-	2817.500	La	2	-	-	2814.869	Ru	30	-	-
2819.626	Rh I	15	-	-	2817.499	Ce	15	-	-	2814.839	Os	10	3	-
2819.581	Mo	-	8	-	2817.440	Mo	8	25	-	2814.824	U	3	2	-
2819.557	Zr I	7	-	-	2817.405	Ti I	20	-	-	2814.811	Ce	40 d	-	-
2819.521	Sc II	8	20	-	2817.364	Ce	2	-	-	2814.801	Ta	125	5	-
2819.52	In II	-	[40]	Ps	2817.36	Bi II	-	6	Cf	2814.798	W	1	12	-
2819.50	Lu	-	6 hl	Me	2817.31	Tm	5	20	Me	2814.758	Hf II	15	35	-
2819.47	Fe	4	2	-	2817.310	Cb	1	5	-	2814.74	Ho	10	20	Ex
2819.443	V	10	40	-	2817.22	Mg	3	8	-	2814.706	Zr I	2	-	-
2819.377	Mn	5	-	-	2817.17	Bi II	-	3	Cf	2814.685	Ne I	-	[20]	Pa
2819.370	Ta	100	5	-	2817.168	Mn	10	-	-	2814.677	Re	50	-	-
2819.333	Fe II	-	3	-	2817.107	Fe II	-	20 h	Do	2814.672	Mo	1	20	-
2819.329	Th	12	10	-	2817.101	Ta	80 d	100	-	2814.65	Nd	5 h	-	-
2819.309	Ce	3	-	-	2817.093	Ru I	50	4	-	2814.648	U	6	2 h	-
2819.294	Zr II	-	2	-	2817.01	Se	-	[25]	Bl	2814.576	Ti II	1	2	-
2819.294	Fe	10	-	-	2817.01	Yb	-	20	Me	2814.574	Th	6	-	-
2819.26	K II	-	[10]	Bn	2816.963	Re I	30	-	-	2814.568	Ce	2	-	-
2819.253	Ce	2	-	-	2816.943	Cs II	-	[2]	Ot	2814.536	Cr	15	2	-
2819.240	Cs	-	[2]	Bs	2816.941	Mo	5	-	-	2814.54	Yb	1	5	-

2814.4—2805.9 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
2814.475	Hf II	25	40	-	2811.455	Ru	5	12	-	2808.823	Ce	2	-	-
2814.470	Ce	4	-	-	2811.427	Dy	3	1 h	-	2808.779	Fe	1	-	-
2814.460	Mn	2 h	-	-	2811.419	Ce	6	-	-	2808.750	Cb	1 h	15	-
2814.430	Ir	4	4	-	2811.374	Mo	-	3	-	2808.695	V	2	10	-
2814.361	Ni I	15	-	-	2811.36	Ho	-	10	Ex	2808.685	Na II	-	[2]	Fr
2814.318	Th	8	5	-	2811.345	U	35	30	-	2808.652	Nd	5	-	-
2814.315	Ce	3	-	-	2811.343	Mn	3 h	-	-	2808.62	Fe	6	2	-
2814.313	Ta	50 r	50	-	2811.27	Mg	-	8	-	2808.584	I	-	[40]	Ke
2814.24	Yb	-	2	-	2811.268	Fe II	-	40	-	2808.566	W	10	-	-
2814.220	Cr	-	5	-	2811.249	Ru	8	-	-	2808.56	Xe	-	[2 h]	Hu
2814.200	Os	50	25	-	2811.171	Cr	10	-	-	2808.543	U	2	4	-
2814.046	Mo	2	6	-	2811.153	Mo	-	10	-	2808.51	W	-	20 l	-
2814.004	Pd II	-	10	-	2811.127	Co I	50	-	-	2808.507	Pt I	20	2	-
2814.001	Pt II	4	15	Sh	2811.056	U	3	2	-	2808.43	Tm	20	10	Me
2813.992	Mn	12 h	-	-	2811.049	Cr	-	15	-	2808.4	Rn	-	[40]	Pe
2813.982	U	1	4 h	-	2810.93	Cd II	-	[3]	Tk	2808.39	La II	10 d	150	-
2813.962	Re	30	-	-	2810.916	Ta	200 W	40 W	-	2808.384	Mn	8	-	-
2813.96	Te	-	[5]	Bl	2810.914	Zr II	10	7	-	2808.374	Mo	25	1	-
2813.95	Eu	300 w	300 wh	-	2810.90	In	-	2	Cx	2808.360	Ce	2	-	-
2813.88	Ca	-	4	Ad	2810.895	Cr	-	3	-	2808.359	Ni II	-	40	-
2813.865	Hf II	25	30	-	2810.892	Rh I	15	1 h	-	2808.331	Pd II	-	2 h	-
2813.839	Os	10	4	-	2810.860	Co II	5	75 h	-	2808.320	Fe	100	40	-
2813.795	U	3	2	-	2810.855	Dy	3	-	-	2808.30	Yb	-	3	-
2813.77	Ho	-	10 h	Ex	2810.812	Cb	3	100	-	2808.231	V	6	30	-
2813.76	Ra II	-	[400]	Rs	2810.81	Cs	-	[20]	Bs	2808.228	Ru	50	-	-
2813.72	La II	2h	5	-	2810.803	Cu II	-	2 h	-	2808.161	Zr II	2	1 h	-
2813.711	Ru	50	125	-	2810.74	Se	-	[5]	Bl	2808.054	Cb	5	2	-
2813.653	Yt I, II	7 d	20 h	-	2810.72	Yb	-	2	-	2808.021	V	-	2 h	-
2813.613	Fe II	5	60	-	2810.70	Eu	5 w	-	-	2808.018	Cr	-	30	-
2813.61	Si	-	[5]	Sy	2810.553	Ru I	50	200	-	2808.016	Mn	20	-	-
2813.582	Sn	50	50	-	2810.51	Hg	2	-	Cn	2808.002	Hf II	25	30	-
2813.549	U	4	1	-	2810.433	Mo	10	10	-	2807.99	Tm	20	30	Me
2813.473	Mn	30	1	-	2810.350	U	6	8 h	-	2807.928	W	7	5	-
2813.41	Cd II	-	[10]	Tk	2810.302	Ti II	6	150	-	2807.870	Re	50 w	-	-
2813.4	Rn	-	[3]	Pe	2810.269	V	50	50	-	2807.85	Fe	2	1	-
2813.30	Ru	-	75	Ex	2810.265	Fe	40	15	-	2807.820	Ce	4	-	-
2813.288	Fe I	400	400	S	2810.233	Mo	-	8	-	2807.755	Mo	60	80 h	-
2813.115	Re	20	-	-	2810.177	Ce	10	-	-	2807.718	W	10	8	-
2813.08	Eu	15	5	-	2810.155	V	10	30 h	-	2807.717	Th	5 d	3 d	-
2813.042	U	12	12	-	2810.10	Yb	-	2	-	2807.674	Ce	4	-	-
2813.03	La II	1 h	3	-	2810.06	Nd	-	5	-	2807.654	Ir I	5	1	-
2813.02	Cu	-	3 h	-	2810.050	Ta	2	-	-	2807.63	Rb	-	[70]	Ok
2812.982	Ti	30	30	-	2810.033	Ru I	50	12	-	2807.57	Br	-	[15]	Bl
2812.975	Pt	2	-	-	2810.012	I	-	[12]	Ke	2807.55	Pd II	-	15 h	-
2812.903	Ce	10	-	-	2809.99	Ho	-	10 h	Ex	2807.55	Xe	-	[5 whl]	Hu
2812.87	Ho	-	20	Ex	2809.955	Mo	20	-	-	2807.537	Ru	-	20	-
2812.845	Mn	20	-	-	2809.952	U	20	20	-	2807.527	Hf II	-	2	-
2812.823	Ru	12	1	-	2809.940	Cr	10	-	-	2807.370	Er	4	-	-
2812.800	Ir I	10	2	-	2809.91	Cs	-	[8]	Bs	2807.355	Mo	20	-	-
2812.694	V	2 h	12 h	-	2809.9	bh B	60	-	L	2807.327	Pd II	-	15 h	-
2812.66	Tb	3	10	m	2809.90	Te	-	[10]	Bl	2807.245	Fe I	15	8	-
2812.61	Mn	1	3	-	2809.847	Ir I	3	-	Ab	2807.22	Yb	-	2 d	-
2812.585	Mo	2	30	-	2809.806	Fe II	1	100 h	-	2807.194	Ru	-	20	-
2812.566	Sn	12	15	-	2809.78	Mg	8	-	-	2807.18	Eu	2	-	-
2812.493	Fe II	2	25	-	2809.72	B	-	2	Sy	2807.174	Co II	1	25	-
2812.449	Co I	3	-	-	2809.720	Gd	60	80	-	2807.142	Rh I	8	-	-
2812.360	Re	25	-	-	2809.657	Cb	-	10	-	2807.05	U	18	30	-
2812.31	Fe I	2	1	-	2809.625	Bi I	200 W	100	Om	2807.038	Ce	10	-	-
2812.270	Mn	1	2	-	2809.612	Cr	-	4 h	-	2806.984	Fe I	200	200	I
2812.26	Tm	5	20	Me	2809.606	Hf II	3	2	-	2806.913	Cb	-	8 h	Me
2812.25	W	3 d	20	-	2809.590	U	2	4 h	-	2806.906	Os	100 w	1	-
2812.235	U	6	4	-	2809.560	Ce	8	-	-	2806.80	Ti II	-	[8]	El
2812.18	Rb	-	[5]	Ok	2809.514	Na II	8	[40]	Fr	2806.793	Mn	12	-	-
2812.169	V	2	20	-	2809.514	V	10	20	-	2806.775	Zr I	12	-	-
2812.147	Mo	4	-	-	2809.50	Ne II	-	[18]	Bn	2806.742	Ru	50	100	-
2812.1	Rn	-	[25]	Wo	2809.396	Mo	5	-	-	2806.72	Ho	-	10	Ex
2812.09	Ir	-	2 h	-	2809.34	La II	2	2	-	2806.711	Ce	2	-	-
2812.070	Re	20	-	-	2809.32	Tb	3	10	Ed	2806.69	U	1	4	-
2812.049	Fe	15	10	-	2809.279	Cr	-	6	-	2806.581	Ta	200	50	-
2812.044	Ti II	3	7	-	2809.222	W	6	6	-	2806.550	V	2	10	-
2812.006	Cr	8	80	-	2809.18	I	-	[12]	Bl	2806.499	Ti	6	20	-
2812.00	Ho	-	12	Ex	2809.172	Cb	2	10	-	2806.42	Hg I	-	[15]	Ps
2811.980	V II	2	12	-	2809.170	Ti	35	-	-	2806.41	Eu	2 w	-	-
2811.980	Ru	4	12	-	2809.106	Mn	25	-	-	2806.396	Ir I	6	1	-
2811.93	In	-	2	-	2809.08	Ho	-	10	Ex	2806.391	W II	2	6	-
2811.866	Ce	12	-	-	2809.01	Cd	-	[3]	Vs	2806.34	U	5	4	-
2811.747	Eu II	50	-	-	2808.99	K II	-	[10]	Bn	2806.301	Ta	300	50	-
2811.724	Ta	1	150	-	2808.98	Ce	5	-	-	2806.181	Mo	-	15	-
2811.659	U	3	6	-	2808.98	U	8	6	-	2806.16	A	-	[40]	Rt
2811.627	Cb	2	15	-	2808.955	Mo	-	6	-	2806.136	Mn	25	-	-
2811.596	V	2	20	-	2808.943	W	1	15	-	2806.070	Fe	15	5	-
2811.593	Pd II	-	3 h	-	2808.94	Th	10 d	5 d	-	2806.060	U	6	2	-
2811.518	Co I	50 w	-	-	2808.935	Os	40	8	-	2806.051	Ir I	3	-	-
2811.503	Mo	20	-	-	2808.84	O II	-	[5]	Mh	2805.976	Re	6	-	-
2811.459	Cr	-	6	-	2808.835	Pt	1	15	-	2805.96	O	-	[10]	Mh

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
2805.95	Cb	—	10 h	—	2803.131	Mo	3	—	—	2800.572	Ta	150 W	40 h	—
2805.923	W II	9 s	30	—	2803.121	Ce	2	—	—	2800.572	Th	6	—	—
2805.898	Er	—	3	—	2803.12	Fe	35	15	—	2800.556	Ce	2	—	—
2805.808	Cb	1	10 h	—	2803.11	Tm	7	10	Me	2800.51	Th	10	40	m
2805.791	Fe II	—	50	—	2803.042	Ce	8	—	—	2800.464	Fe	50	10	—
2805.785	Rh I	20	1	—	2803.02	Xe	—	[3]	Hu	2800.449	U	5	4	—
2805.71	U	3 w	—	—	2802.953	W	12 d	10 d	—	2800.41	Tm	10	10	Me
2805.71	Zr II	—	2 w	Ks	2802.868	Er	6	1	—	2800.344	Mo	—	10 h	—
2805.704	Ti I	35	2	—	2802.86	Eu	150 w	—	—	2800.33	Dy	3	1 h	—
2805.674	Ni II	—	200 h	—	2802.86	Te	—	[15]	Bl	2800.32	Rb	—	[10]	Ok
2805.65	Al	—	[30]	Sy	2802.840	Re	5 w	—	—	2800.318	Cb	3	4	—
2805.627	W	10	2	—	2802.806	Ru	50	150	—	2800.298	U	3	8	—
2805.624	Ce	2	—	—	2802.800	Mn	12	—	—	2800.28	Fe	6	2	—
2805.59	Cd	—	30	—	2802.797	V	15	25 h	—	2800.22	Cl	—	[4]	Bl
2805.59	La II	1 d	5	—	2802.76	Hg	5	15	Cn	2800.174	Cr	—	40	—
2805.540	V	12	35	—	2802.715	Cb	2	5	—	2800.103	U	5	6 h	—
2805.457	Ce	2	—	—	2802.707	Bi II	—	10	—	2800.102	Yt II	10	20	—
2805.400	In II	—	[18]	Ps	2802.706	Co	100	200 h	—	2800.085	W	6	3	—
2805.362	Mn	1	5	—	2802.702	Ta	10	4	—	2800.04	Yb	2	8	—
2805.32	Au II	—	30	—	2802.70	Dy	2	—	—	2800.02	V	—	4 h	Me
2805.315	Fe II	—	15	—	2802.699	Ce	18	5 h	—	2799.99	Ho	—	10	Ex
2805.31	Pd	—	[2 h]	Bx	2802.695	Mg II	150	300	—	2799.981	Pt II	20	80 h	Sh
2805.288	In II	—	[5 h]	Ps	2802.683	Cu I	10	2	—	2799.924	W	12	12 s	—
2805.244	U	10	8	—	2802.65	Mn	2 d	—	—	2799.911	Ru	—	50	—
2805.207	Mn II	2	6	Cz	2802.559	U	15	30	—	2799.842	Mn	20	—	—
2805.113	Ce	3	—	—	2802.55	Bi II	—	3	Cf	2799.825	Ir I	3	—	—
2805.083	Ni I	50	15	—	2802.53	Te	—	[10]	Bl	2799.784	Hf II	—	2	—
2805.064	Ta	3	2 h	—	2802.528	Er	12	1	—	2799.764	U	6	4	—
2805.01	Ti II	—	200 wh	Ex	2802.500	Ti I	100	15	—	2799.76	Hg I	10	10 h	Cn
2804.96	W	—	12	—	2802.493	Ta	15	2	—	2799.738	Ir I	6	5	—
2804.924	Mn	10	—	—	2802.473	Pd II	—	10	—	2799.728	Er	4	—	—
2804.882	Ru	—	60	—	2802.44	Bi II	—	2	Cf	2799.721	Fe II	—	10	—
2804.865	Fe	20	15	—	2802.414	Mn	12	—	—	2799.72	Dy	2 h	—	—
2804.855	Ca	—	3 wh	—	2802.354	Mo	15	25	—	2799.7	Oh C	50	3	L
2804.814	Ce	2	—	—	2802.282	Ce	2	—	—	2799.677	W	7	3	—
2804.764	Ta	20	2	—	2802.274	Ni	50	15	—	2799.676	I	—	[12]	Ke
2804.76	I	—	[20]	Bl	2802.27	Br	—	[3]	Bl	2799.66	Ag II	20	100 h	—
2804.69	Zn II	—	[10]	Vs	2802.251	Re	10 h	—	—	2799.573	Ru	—	12	—
2804.673	W	12	9	—	2802.25	Fe	3	—	—	2799.536	Cu II	—	3	—
2804.53	La II	—	4	—	2802.23	S	—	[8]	Bl	2799.47	Cs	—	[2]	Ba
2804.521	Fe I	300	200	S	2802.19	Au	—	200	—	2799.451	V	25	100 h	—
2804.462	Hg I	18	10	Cn	2802.168	Mn	5	—	—	2799.43	Cl	—	[4]	An
2804.442	V	—	12	—	2802.162	Ru	30	40	—	2799.417	Ir I	3	—	—
2804.395	Ce	4	—	—	2802.157	U	6	4	—	2799.37	Yb	2	3	—
2804.362	Mn	8	—	—	2802.1	Rn	—	[3]	Wo	2799.357	Cb	3	2	—
2804.358	Er	12	2	—	2802.071	Ta	300	80	—	2799.286	Fe II	1	100	—
2804.26	Yb	—	2	—	2802.01	In	—	3	—	2799.20	N II	—	[25]	Fl
2804.237	W	10	9	—	2802.003	Pb	250 Rh	100 h	—	2799.175	Cb	2	8	—
2804.099	Co I	5	—	—	2801.949	W	8	6 l	—	2799.155	Ce	3	—	—
2804.095	Mn	15	—	—	2801.93	Ag II	—	10 w	Bx	2799.153	Ir	2	—	—
2804.088	Ce	2	—	—	2801.887	Nd	—	2	—	2799.153	Fe	50	10	—
2804.067	Os	80	20	—	2801.865	Ru	30	—	—	2799.149	Zr II	5	6	—
2804.021	Fe II	—	15	—	2801.81	Ti II	—	[25]	El	2799.12	U	10 d	4 d	—
2804.014	W	10	4	—	2801.79	Zn II	—	[25]	Vs	2799.120	Th	5	4	—
2804.004	Ta	3	10 h	—	2801.747	Ce	2	—	—	2799.112	Ce	3	—	—
2803.99	U	3 d	10 h	—	2801.654	U	10	10	—	2799.034	W II	8	20	—
2803.943	Ce	4	—	—	2801.551	Cb	—	10 w	Me	2799.00	Br	—	[35]	Bl
2803.903	Rh I	4	2	—	2801.547	Pd II	—	3	—	2798.98	Cd II	—	3	—
2803.833	U	8	8	—	2801.546	Mo	20	1	—	2798.91	Rb	—	[40]	Ok
2803.808	Cb	3	15	—	2801.467	Mo	20	3	—	2798.909	Cb	2	15	—
2803.8	K	—	[30]	MI	2801.426	W II	4	6	—	2798.899	Mo	—	10 h	—
2803.772	Co I	100	12	—	2801.410	Dy	3	1 h	—	2798.894	Ca	2	—	—
2803.772	Ca	—	2	Ad	2801.337	U	3	2	—	2798.86	Dy	2	—	—
2803.663	W II	6	12 l	—	2801.312	Sc II	6	5 h	—	2798.765	Ru	—	35	—
2803.653	Bi II	—	15	Om	2801.31	C II	—	6 h	En	2798.760	In II	—	[30]	Ps
2803.620	Mn	12	—	—	2801.23	Kr II	—	[2 whl]	Me	2798.758	V	25	80 h	—
2803.620	Fe	50	20	—	2801.22	Hg	2	—	Cn	2798.685	Bi I	200	25	—
2803.60	Kr II	—	[4 h]	Me	2801.196	Ce	2	—	—	2798.672	Cr	10	20	—
2803.570	Bi II	2	10	—	2801.173	Al II	—	[3]	Sy	2798.670	Th	6	4	—
2803.541	Er	6	8	—	2801.169	W	10	8	—	2798.653	Co	4	—	—
2803.54	Cb	—	3 Wh	Me	2801.167	Zn I	5	—	Hz	2798.653	Ni I	125	—	—
2803.498	Hu	50	4	—	2801.064	Mn	600 R	60	—	2798.546	La II	2	40 hl	—
2803.482	Bi II	2 h	30	—	2801.056	Zn I	100	20	Hz	2798.50	Se	—	[10]	Bl
2803.48	Yb	—	40	—	2801.051	W II	6	15	—	2798.447	W	8	1	—
2803.472	Hg I	20	20 h	—	2800.98	Kr II	—	[2 whl]	Me	2798.404	Ta	150	—	—
2803.467	V	30	25	—	2800.93	V	—	30 h	Me	2798.271	Mn	800 R	80	—
2803.381	Th	2 h	8	—	2800.869	Zn I	400	300	Hz	2798.270	Zr I	100	—	—
2803.357	Cr	1	30	—	2800.820	Ir I	18	5	—	2798.24	Yb	4	10	—
2803.30	W	—	9 l	—	2800.771	Cr	12	150	—	2798.21	U	1 hd	4 hd	—
2803.239	Pt I	400	5	—	2800.74	Pd II	—	[10 wh]	Bx	2798.182	Ir I	15	5	—
2803.236	Re	8 h	—	—	2800.731	Mo	2	15	—	2798.14	Cd	—	3	—
2803.20	Kr II	—	[20 h]	Me	2800.695	Ru	8	—	—	2798.111	Re	20	—	—
2803.18	In	—	2	Sq	2800.695	Re	15 h	—	—	2798.06	Mg II	30	80	—
2803.172	Fe I	15	—	—	2800.638	Pd II	—	10 wh	—	2798.011	Mo	15	30	—
2803.148	Ni I	5	—	—	2800.61	Ti II	—	150 wh	—	2797.931	Mo	15	2	—

2797.9—2789.1 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities				
		Arc	Spk.,	[Dis.]	R		Arc	Spk.,	[Dis.]	R		Arc	Spk.,	[Dis.]	R	
2797.914	Fe II	—	20	—	—	2795.232	U	18	12	—	2791.95	Te	—	[30]	Bl	
2797.807	Pt II	2	20	—	Sh	2795.21	Ra II	—	[125]	Rs	2791.80	Tb	—	10	Ex	
2797.795	V	12	70 h	—	Me	2795.138	Cb	1	15	—	2791.792	Fe	60	40	—	
2797.775	Fe I	150	80	—	I	2795.129	Zr I	5	—	—	2791.787	Ce	2	—	—	
2797.77	Yb	—	6	—	—	2795.101	Ne I	—	[35]	Ps	2791.785	Cu II	1 h	5	—	
2797.760	Ta	100 d	100 d	—	—	2795.07	Yb	—	3	—	2791.740	Cb	3	100	—	
2797.740	Th	10	10	—	—	2795.007	Fe I	50	35	—	2791.674	Ta	100	10	—	
2797.724	Ce	4	—	—	—	2794.817	Mn	1000 R	5	—	2791.631	Re	10	—	—	
2797.709	Ru	12	4 h	—	—	2794.816	Co	100 R	15	—	2791.63	Ca	—	6	Ad	
2797.702	Ir I	18	10	—	—	2794.80	Yb	—	3	—	2791.62	Tm	10	40	Me	
2797.693	Cb	10	200	—	—	2794.704	Fe I	50	30	—	2791.62	Pd II	—	—	[3]	Bx
2797.69	Sb II	—	5 hs	—	—	2794.60	Tm	60	20	Me	2791.584	Mn	3	—	—	
2797.65	Xe II	—	[15 h]	—	Hu	2794.592	Ne I	—	[5]	Pa	2791.540	Mo	1	30	—	
2797.641	Sb	—	4 wh	—	Sp	2794.59	Ti II	—	[2]	El	2791.513	La II	2	25	—	
2797.627	Ce	3	—	—	—	2794.573	Mo	3	3	—	2791.495	V	4	10	—	
2797.625	W	5	3	—	—	2794.553	Ir I	3	—	—	2791.462	Fe	40	20	—	
2797.468	W	10	4	—	—	2794.50	Cs II	—	[8]	Ba	2791.418	Ce	18	—	—	
2797.465	Re	3	—	—	—	2794.43	Yb	1	5	—	2791.372	Cb	1	5	—	
2797.43	Hg	—	[8]	—	Ps	2794.417	U	3	4	—	2791.370	Ta	25	150	—	
2797.300	U	5	4	—	—	2794.301	V	—	9 h	—	2791.293	Re	60	—	—	
2797.289	W	—	3 h	—	—	2794.26	Ne II	—	[10]	Bn	2791.260	U	5	2	—	
2797.269	Tm	60	100	—	Me	2794.260	Th	10	10	—	2791.169	Ta	2	—	—	
2797.22	Nd	5	—	—	—	2794.247	Ce	3	—	—	2791.158	Rh I	100	1 h	—	
2797.20	I	—	[12]	—	Bl	2794.208	Pt II	10	100 wh	—	2791.11	Pd	—	—	[5]	Bx
2797.195	W	9	4	—	—	2794.2	air	—	3	—	2791.080	Mn	15	—	—	
2797.174	Ce	4	—	—	—	2794.163	Re	2	—	—	2791.068	U	6	12	—	
2797.15	Ca	—	4	—	Ad	2794.16	Fe	10	—	—	2791.052	Ru	10	3	—	
2797.145	U	10	8	—	—	2794.086	Ir I	8	—	—	2791.04	Hg	6	10	Cn	
2797.094	Mn	5	—	—	—	2794.02	La	4	—	—	2791.016	Th	10	10	—	
2797.081	Co I	50	2	—	—	2793.972	Mo	3	15 wh	—	2791.011	Co I	50	—	—	
2797.026	Th	8	6	—	—	2793.938	Ge I	8	5	m	2791.008	Ce	3	—	—	
2797.018	V	12	80 h	—	—	2793.937	U	25	30	—	2791.008	Fe	—	10	—	
2797.009	Ce	3	—	—	—	2793.92	Co II	—	5 h	—	2790.945	Re	40	—	—	
2796.942	Mn	8	—	—	—	2793.888	Fe II	8	150	—	2790.93	Fe	2	—	—	
2796.94	Gd	70	80	—	—	2793.885	Cb	—	10	—	2790.915	Mn	8	—	—	
2796.901	Zr II	10	7	—	—	2793.846	Er	4	1	—	2790.787	Mg II	40	80	—	
2796.89	Mo	—	15 wh	—	—	2793.809	Ir	—	4 h	—	2790.755	Rh	3	3	—	
2796.871	Fe I	15	3	—	—	2793.695	Cb	—	5	—	2790.710	Ta	150	10	—	
2796.859	W II	3	10	—	—	2793.663	Re	4 h	—	—	2790.688	Ir I	3	2	—	
2796.83	Co II	—	3	—	—	2793.649	Pt I	10	—	—	2790.665	U	8	10	—	
2796.777	Mo	4	10	—	—	2793.568	Ce	4	—	—	2790.66	Ti II	—	30 wh	—	
2796.727	Os	100	15	—	—	2793.52	Sb II	—	[10]	Lg	2790.573	Cb	2	10	—	
2796.70	U	—	2 h	—	—	2793.51	I	—	[20]	Bl	2790.564	W	9	1 h	—	
2796.699	Ru	20	—	—	—	2793.479	W	6	1	—	2790.559	Fe II	—	35	—	
2796.65	A	—	[2]	—	Rt	2793.43	U	4 d	4 d	—	2790.529	Ce	10	—	—	
2796.649	Fe II	—	20	—	—	2793.390	Zr	10	—	—	2790.47	I	—	—	[4]	Ke
2796.632	Rh I	100	1	—	—	2793.316	Cs II	—	[2]	Ot	2790.46	Hg II	—	—	[3]	Ps
2796.63	Lu	25	100	—	Me	2793.28	Yb	1	8	—	2790.45	Hf II	3	3	—	
2796.620	Re	8	—	—	—	2793.266	Pt I	100	5	—	2790.425	Th	4	10	—	
2796.606	Pd II	—	5	—	—	2793.24	Te	—	[300]	Bl	2790.417	W II	2	15	—	
2796.565	Ta	150	—	—	—	2793.168	Er	3	—	—	2790.409	Mo	3	25	—	
2796.554	Ru	20	—	3 h	—	2793.120	W	9	4	—	2790.387	Sb	—	6	Sp	
2796.49	Xe	—	[3 hl]	—	Hu	2793.048	Cb	10 w	100	—	2790.356	Mn	20	—	—	
2796.456	Ir I	10	5	—	—	2792.964	Mo	30	2	—	2790.318	U	2	2	—	
2796.366	La II	2	5	—	—	2792.884	Ce	2	—	—	2790.308	Mo	30	1	—	
2796.339	Ta	400	80	—	—	2792.802	Hf II	2	2	—	2790.283	Co	30 h	—	—	
2796.26	Kr II	—	[2]	—	Me	2792.796	W	9	7	—	2790.28	As	—	3	Ro	
2796.236	U	6	2	—	—	2792.78	Rh	2	3	—	2790.216	Ru	—	30	—	
2796.231	Co I	50	5	—	—	2792.743	In	—	2	—	2790.186	Sn	5	4	—	
2796.206	Ce	2	—	—	—	2792.696	W	10	10	—	2790.143	Zr I	20	—	—	
2796.147	W	12 s	3	—	—	2792.660	Ne I	—	[3]	Ps	2790.088	V	1	9 h	—	
2796.13	Hg II	—	[8]	—	Ps	2792.645	Ru	50	1	—	2790.010	Mo	15	—	—	
2796.081	Re	10	—	—	—	2792.637	Ta	8	2	—	2789.83	Kr	—	—	[3 whl]	Me
2795.963	Ne I	—	[8]	—	Ps	2792.53	Ho	—	10 h	Ex	2789.805	Ir I	3	1	—	
2795.945	Ce	2	—	—	—	2792.524	Er	—	7	—	2789.804	Hf II	15	5 h	—	
2795.865	Cb	4	3	—	—	2792.523	U	2	—	—	2789.802	Fe	50	25	—	
2795.85	Fe	15 W	10	—	—	2792.521	W	9	8	—	2789.797	Cs II	—	—	[8]	Ot
2795.819	Co I	15	—	—	—	2792.51	Eu	—	2	—	2789.742	Cb	—	—	3 h	—
2795.818	Cr	35	3	—	—	2792.439	Co I	40	3	—	2789.731	Mn	2	—	—	
2795.81	Kr	—	[80 h]	—	Me	2792.439	Ce	3	—	—	2789.73	Hf II	20	30	—	
2795.767	Fe II	—	3 h	—	—	2792.43	V	—	12 h	Me	2789.685	Fe	3	1	—	
2795.701	Rh I	15	—	—	—	2792.402	Fe	50	25	—	2789.677	W	12 s	5	—	
2795.64	Yb	—	8	—	—	2792.380	Ce	2	—	—	2789.50	Hf	5	15	—	
2795.60	Co	—	10 wh	—	Ex	2792.332	Ru	10	100	—	2789.483	Fe I	60	30	—	
2795.55	W	1	10	—	—	2792.318	Ne I	—	[20]	Ps	2789.43	Yb	—	2	—	
2795.544	Fe I	90	60	—	—	2792.209	W	7	4	—	2789.430	I	—	—	[30]	Ke
2795.532	Ag	10	10	—	—	2792.164	Cr	5	80	—	2789.396	Cr	—	20	—	
2795.53	Mg II	150	300	—	—	2792.16	Cs	—	[8]	Bs	2789.372	W	5	1	—	
2795.53	Au II	—	15	—	—	2792.074	U	5	2	—	2789.351	Mn	12 h	—	—	
2795.525	Ce	30 s	8	—	—	2792.053	Fe II	—	2	—	2789.328	Ce	2	—	—	
2795.45	A	—	[2]	—	Rt	2792.05	Ne II	—	[25]	Bn	2789.323	Sn	5	3	Ar	
2795.384	Ce	2	—	—	—	2792.037	Zr I	12	—	—	2789.273	Re	20	—	—	
2795.353	Ru	80	8 h	—	—	2791.97	Gd	25	15	—	2789.206	Cb	2	—	5 h	—
2795.331	Cu II	—	2	—	—	2791.96	Cu	7	—	—	2789.2	Rn	—	—	[20]	Pe
2795.33	A	—	[2]	—	Rt	2791.953	W	12	8	—	2789.197	Mn	15	—	—	

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2789.169	Sc II	4	10	wh	-	2786.002	Sb	-	4	-	-	2783.129	Mo	3	-	-	-
2789.163	W	3	12	-	-	2786.00	Ti II	-	60	wh	-	2783.119	W	10	12	-	-
2789.133	Mo	10	-	-	-	2785.912	U	-	4	h	-	2783.082	Mn	12	-	-	-
2789.071	W	10	7	-	-	2785.902	Co I	50	-	-	-	2783.054	Th	10	10	-	-
2789.063	U	12	10	-	-	2785.883	W	7	2	-	-	2783.043	Ce	5	-	-	-
2788.962	Ir	2	-	-	-	2785.791	Nd	5	-	-	-	2783.029	Rh I	150	10	-	-
2788.87	Sb	-	[4]	-	Lg	2785.718	Re	15	-	-	-	2782.99	V	1	10	h	-
2788.81	Cs	-	[2]	-	Bs	2785.700	Cr	5	80	-	-	2782.974	Mg	15	15	-	-
2788.710	Ru	-	50	-	-	2785.689	V I	25	-	-	-	2782.83	Zn II	-	[20]	-	Vs
2788.689	Ce	8	-	-	-	2785.650	Ru I	60	200	-	-	2782.805	Cb	-	5	-	-
2788.686	Cb	-	5	-	-	2785.647	U	3	2	-	-	2782.734	Mn	50	-	-	-
2788.684	Th	8	8	-	-	2785.633	W II	3	20	-	-	2782.73	Br	-	[2]	-	Bl
2788.681	Mn	5	-	-	-	2785.619	Mo	1	15	-	-	2782.730	Nd	5	2	-	-
2788.671	U	5	2	-	-	2785.613	Th	2	h	3	-	2782.699	Ce	2	-	-	-
2788.67	V	-	7	h	-	2785.594	Yt II	5	18	-	-	2782.654	W	4	-	-	-
2788.625	Pt II	6	20	-	-	2785.543	V	25	-	-	-	2782.6	Rn	-	[3]	-	Pe
2788.62	Cl	-	[4]	-	Bl	2785.428	Re	20	-	-	-	2782.592	Cu I	20	1	h	-
2788.526	U	4	4	-	-	2785.42	Xe II	-	[2]	-	Hu	2782.592	Cr	-	20	-	-
2788.526	W	-	6	-	-	2785.4	bh C	30	-	-	L	2782.576	V	-	9	h	-
2788.462	Er	4	-	-	-	2785.347	Ce	12	-	-	-	2782.552	Os	40	15	-	-
2788.40	Hg II	-	[12]	-	Ps	2785.334	U	4	2	-	-	2782.46	O	-	[5]	-	Mh
2788.31	Yb	-	8	-	-	2785.264	Ba I	50	-	-	Sz	2782.363	Cb	10	20	-	-
2788.302	Ta	150	3	-	-	2785.26	Br	-	[3]	-	Bl	2782.358	Sc II	4	5	-	-
2788.22	Cs	-	[20]	-	Sv	2785.235	Yt II	7	20	-	-	2782.354	Cr	-	35	-	-
2788.190	V	10	-	-	-	2785.224	Ir I	25	10	-	-	2782.261	Co I	3	-	-	-
2788.132	U	2	2	-	-	2785.213	Fe II	-	40	h	Do	2782.229	Ir I	2	-	-	-
2788.105	Fe I	150	150	-	-	2785.208	Re I	30	-	-	-	2782.209	Ru I	50	1	-	-
2788.022	Ce	2	-	-	-	2785.2	Rn	-	[3]	-	Wo	2782.135	W II	4	30	-	-
2788.02	Ti II	-	70	hd	-	2785.17	U	3	d	2	d	2782.118	Er	5	-	-	-
2787.978	W	12	10	-	-	2785.161	Ru	-	20	-	-	2782.10	I	-	[12]	-	Bl
2787.97	Yb	-	3	-	-	2785.14	B	-	35	-	Sy	2782.071	U	5	10	-	-
2787.935	Fe I	25	15	-	-	2785.125	Ce	4	-	-	-	2782.05	Fe	12	6	-	-
2787.929	Sn	50	50	-	-	2785.104	Cr	-	10	-	-	2782.004	Mo	-	3	h	-
2787.924	V	-	30	h	-	2785.08	Tm	60	30	-	Me	2781.986	Ce	10	-	-	-
2787.921	Pd II	-	15	wh	-	2785.068	Cb	1	5	-	-	2781.93	Hg	-	[8]	-	Ps
2787.895	Cr	-	20	-	-	2785.031	Sn	60	60	-	-	2781.894	Ce	6	-	-	-
2787.830	Mo	40	4	-	-	2784.992	Mo	100	200	-	-	2781.89	Eu I	100	w	100	w
2787.826	Ru	60	150	-	-	2784.978	Th	8	6	-	-	2781.835	Fe I	90	60	-	I
2787.819	Mn	12	-	-	-	2784.971	Ce	2	-	-	-	2781.80	Rh I	1	150	-	-
2787.711	Er	12	3	-	-	2784.967	Ta	50	100	-	-	2781.788	Ta	25	1	-	-
2787.693	Ta	400	R	40	-	2784.954	Er	10	1	-	-	2781.68	Ne I	-	[3]	-	Ps
2787.650	Ce	2	-	-	-	2784.919	U	6	8	-	-	2781.616	U	8	8	-	-
2787.628	Cr	5	30	-	-	2784.882	Ru	6	-	-	-	2781.573	Dy	2	-	-	Bx
2787.406	Er	8	1	-	-	2784.80	Lu	-	8	h	Me	2781.48	Pd II	-	[2	wh]	Me
2787.391	Re	2	-	-	-	2784.669	U	8	-	-	-	2781.47	Lu	4	h	-	-
2787.331	U	6	8	-	-	2784.666	Cs II	-	[2]	-	Ot	2781.454	V	4	125	h	Me
2787.325	V	-	4	-	-	2784.664	Ce	4	-	-	-	2781.448	Re	40	-	-	-
2787.315	Mo	1	5	-	-	2784.65	Yb	2	20	-	-	2781.431	Ce	6	-	-	-
2787.260	Fe II	-	10	h	Do	2784.643	Ti II	7	20	-	-	2781.42	Ne	-	[3]	-	Ps
2787.246	Ru	-	30	-	-	2784.526	Ru	60	100	-	-	2781.417	Mg	20	8	-	-
2787.22	Eu	4	w	-	-	2784.450	U	8	12	-	-	2781.408	U	3	6	h	-
2787.132	Th	8	8	-	-	2784.445	Cb	-	10	-	-	2781.405	Gd	30	40	-	-
2787.128	Ce	6	-	-	-	2784.346	Fe	15	6	-	-	2781.369	Ta	50	4	-	-
2787.11	Fe	1	-	-	-	2784.317	Cr	-	3	-	-	2781.289	Ir I	18	10	-	-
2787.02	Cs	-	[8]	-	Bs	2784.282	Fe II	-	5	-	-	2781.23	Zn I	25	5	h	Fl
2787.020	Co I	5	-	-	-	2784.271	Ce	15	-	-	-	2781.187	Er	4	s	1	-
2786.996	V	2	wh	20	h	2784.27	V	4	50	h	-	2781.155	Cr	10	12	-	-
2786.952	Zr II	-	3	wh	-	2784.10	Cs	-	[8]	-	Bs	2781.035	U	8	8	-	-
2786.95	Ho	-	10	-	Ex	2784.066	Th	6	5	-	-	2781.032	Co	8	-	-	-
2786.917	Th	5	8	-	-	2784.056	Ce	2	-	-	-	2781.01	Cl	-	[8]	-	Jv
2786.909	Ce	2	-	-	-	2784.011	Fe	12	3	-	-	2781.01	Fe	8	2	-	-
2786.855	Zr I	5	-	-	-	2784.008	Mo	20	1	-	-	2780.994	Mo	15	1	h	-
2786.804	U	3	4	-	-	2784.004	U	6	6	-	-	2780.983	Cb	1	4	-	-
2786.798	Os	40	8	-	-	2783.97	I	-	[12]	-	Bl	2780.98	I	-	[12]	-	Bl
2786.780	Fe	15	7	-	-	2783.94	V	1	10	h	Me	2780.943	Ir I	5	5	-	-
2786.688	Ce	2	-	-	-	2783.867	U	6	8	-	-	2780.890	Fe	10	3	-	-
2786.628	U	4	2	-	-	2783.843	Cr	-	35	-	-	2780.888	Cr	-	20	-	-
2786.560	Re I	25	-	-	-	2783.84	Rb	-	[10]	-	Ok	2780.87	Tm	10	20	-	Me
2786.520	Ce	2	-	-	-	2783.786	Ce	3	-	-	-	2780.83	Au	-	20	-	-
2786.514	W	8	2	-	-	2783.783	V I	15	-	-	-	2780.826	Re	3	w	-	-
2786.496	Cu I	8	-	-	-	2783.696	Fe II	20	400	-	-	2780.81	Cs	-	[2]	-	Bs
2786.49	Ag II	10	10	h	-	2783.694	Ta	2	h	-	-	2780.79	P	-	[10]	-	Gu
2786.486	Cr	1	30	-	-	2783.692	Hf	15	-	-	-	2780.772	U	6	6	-	-
2786.41	Te	-	[5]	-	Bl	2783.691	Er	2	2	-	-	2780.771	Ru	30	8	-	-
2786.366	Ru	-	8	-	-	2783.678	W	7	5	-	-	2780.76	Nd	5	-	-	-
2786.313	W II	2	d	15	-	2783.573	Re I	150	w	-	-	2780.703	Cr I	600	R	15	-
2786.306	Os	25	5	-	-	2783.559	Zr II	5	5	-	-	2780.700	Fe	30	15	-	-
2786.301	Hf II	10	15	-	-	2783.551	Cu I	18	-	-	-	2780.54	Fe	10	2	-	-
2786.25	In	-	8	-	Cx	2783.496	Th	6	6	-	-	2780.526	Eu	20	-	-	-
2786.230	Mo	-	4	-	-	2783.490	Ce	2	-	-	-	2780.521	Bi I	200	W	100	Om
2786.215	U	4	4	h	-	2783.405	U	3	4	-	-	2780.56	Ti II	-	60	wh	-
2786.19	Tm	10	30	-	Me	2783.290	U	6	-	-	-	2780.409	Ir I	3	-	-	-
2786.139	Re	20	-	-	-	2783.15	O II	-	[3]	-	Mh	2780.299	Cr	-	100	-	-
2786.109	Er	10	1	-	-	2783.145	Re	10	-	-	-	2780.283	W II	10	20	-	-
						2783.14	Cl	-	[7]	-	Jv	2780.28	I	-	[20]	-	Bl

2780.2—2772.5 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2780.28	Cd	—	—	[25]	Es	2777.798	Ce	3	—	—	—	2774.736	U	3	10	—	—
2780.25	Tl II	—	—	[20]	El	2777.76	Sm	2	2	—	—	2774.734	Fe I	80	10	—	—
2780.245	Cb	30	200 r	—	—	2777.743	Mo	30	2	—	—	2774.717	V	20	50 h	—	—
2780.234	La II	20	10 h	—	—	2777.733	V II	40 h	100 R	—	—	2774.70	Ho	—	300	Ex	—
2780.208	Ta	4	—	—	—	2777.723	Re	20 w	—	—	—	2774.691	Fe II	—	50	—	—
2780.197	As I	75 R	75	—	—	2777.667	Cr	40	1	—	—	2774.620	Er	6	2	—	—
2780.15	Ga II	—	—	[40]	Sy	2777.530	Ir I	3	—	—	—	2774.59	Kr II	—	[3]	Me	—
2780.1	K	—	—	[2]	Sg	2777.51	Tm	10	15	Me	—	2774.585	Ir I	5	1	—	—
2780.097	V	—	—	10	—	2777.497	Ru	5	50	—	—	2774.486	Cb	—	10	—	—
2780.06	Ne II	—	—	[5]	Bn	2777.464	Mn	10	—	—	—	2774.483	Ru	60	2	—	—
2780.045	Fe II	—	—	20	—	2777.434	Ir I	8	5	—	—	2774.480	W	15	20 l	—	—
2780.04	Yb	—	—	2	—	2777.42	I	—	[12]	Bl	—	2774.46	Cs	—	[8]	Bs	—
2780.040	W	8	8	—	—	2777.392	Ru	—	50	—	—	2774.436	Cr	—	100	—	—
2780.036	Mo	60	100 h	—	—	2777.258	W	6	2	—	—	2774.43	U	4 d	4 d	—	—
2780.005	Ce	15	—	—	—	2777.226	Re	10	—	—	—	2774.392	Mo	30	50 h	—	—
2779.998	Mn	25	—	—	—	2777.10	Ho	—	10	Ex	—	2774.387	Re	6	5	—	—
2779.906	Fe II	—	—	40	Do	2777.05	Tm	8	25	Me	—	2774.375	Os	8	—	—	—
2779.9	Cs	—	—	[8]	Bs	2776.962	Re	15	—	—	—	2774.32	Yb	—	3	—	—
2779.841	Co II	—	—	3	—	2776.961	Ce	2	—	—	—	2774.276	V	25	100 R	—	—
2779.834	Mg	40	50	—	—	2776.923	Fe II	—	25 h	Do	—	2774.205	Pt	4	—	—	—
2779.825	Ce	2	—	—	—	2776.910	Os	25	8	—	—	2774.181	Ru	—	6	—	—
2779.817	Sn	80	100	—	—	2776.843	Pd II	—	25 wh	—	—	2774.17	Rh	1	40	—	—
2779.778	La II	1	10	—	—	2776.690	Mg	30	20	—	—	2774.169	U	1	4 wh	—	—
2779.724	W	8	7	—	—	2776.685	V	2 h	—	—	—	2774.157	Zr II	10	10	—	—
2779.719	Cb	5	4	—	—	2776.672	Mo	1	20	—	—	2774.151	Os	5	2	—	—
2779.704	Ta	30 r	4	—	—	2776.652	Cr	—	25	—	—	2774.14	Fe	1	—	—	—
2779.701	Pd II	—	5	—	—	2776.59	Zr II	1	2 w	—	—	2774.091	W	—	10	—	—
2779.70	Fe	4	—	—	—	2776.52	Eu	4	—	—	—	2774.072	Th	6	6	—	—
2779.654	Ir I	3	—	—	—	2776.513	U	6	6	—	—	2774.060	Cb	2	5 d	—	—
2779.56	Tm	30	10	Me	—	2776.502	W II	12 d	25	—	—	2774.059	Ce	2	—	—	—
2779.537	Rh I	100	6	—	—	2776.471	V	30 h	—	—	—	2774.038	Zr I	10	—	—	—
2779.51	Kr II	—	—	[4]	Me	2776.42	Cs	—	[20]	Bs	—	2774.016	Os	12	6	—	—
2779.476	Mo	25	1	—	—	2776.400	Ru	6	—	—	—	2774.016	Hf II	25	50	—	—
2779.406	U	6	6	—	—	2776.399	Fe	100	30	—	—	2774.005	V I	9	—	—	—
2779.392	Ru	—	30	—	—	2776.29	U	6 w	6 w	—	—	2774.002	W	12	2	—	—
2779.366	Hf	20	4	—	—	2776.27	Yb	6	40	—	—	2773.996	Pt I	50	2	—	—
2779.361	Cb	5	5	—	—	2776.231	Mn	80	—	—	—	2773.947	Ce	2	—	—	—
2779.317	W	5	4	—	—	2776.23	V	—	6 h	—	—	2773.901	Ir I	7	5	—	—
2779.299	Re	5	—	—	—	2776.21	Co	—	10	—	—	2773.9	Rb	—	[2]	Dr	—
2779.299	Fe II	25	300	—	—	2776.175	Fe II	—	40	—	—	2773.90	Fe	10	5	—	—
2779.26	B	—	100	Sy	—	2776.13	I	—	[20]	Bl	—	2773.87	W II	4	9	—	—
2779.239	Mo	—	25	—	—	2776.086	W	9	2	—	—	2773.84	Ho	—	—	Ex	—
2779.135	Cr	20	5	—	—	2776.08	Cd	—	3	—	—	2773.80	Tm	10	—	Me	—
2779.11	Kr II	—	—	[20]	Me	2776.02	W	2	8	—	—	2773.784	Mo	15	25	—	—
2779.1	Cs	—	—	[8]	Bs	2775.907	Ru I	50	—	—	—	2773.77	U	3 d	2 d	—	—
2779.098	Ta	150 w	5 h	—	—	2775.877	Ta	200	30	—	—	2773.698	W	12	8	—	—
2779.99	Kr II	—	—	[2]	Me	2775.780	U	3	4	—	—	2773.680	Fe II	—	1	—	—
2778.986	Ru	50	50	—	—	2775.769	Rh	5	125	—	—	2773.679	V I	35	7	—	—
2778.953	U	4	2	—	—	2775.763	V	12	70 h	—	—	2773.67	Co I	3	—	—	—
2778.938	Cr	—	12	—	—	2775.76	Sb	—	3 h	Sp	—	2773.664	Mn	15	—	—	—
2778.845	Fe	70	40	—	—	2775.668	Cr	30	—	—	—	2773.607	U	6	10	—	—
2778.822	Co I	75	8	—	—	2775.654	Mn II	4	10 h	Cz	—	2773.597	Pt I	7	—	—	—
2778.757	La II	1	10	—	—	2775.646	Re	15	—	—	—	2773.594	Ir I	4	—	—	—
2778.710	Th	10	10	—	—	2775.631	Ru	50	150	—	—	2773.55	Xe	—	[3 h]	Hu	—
2778.699	Ce	2	—	—	—	2775.580	Co I	50	—	—	—	2773.500	Hf II	10	10 h	—	—
2778.686	W	3	20	—	—	2775.554	Ir I	12	2	—	—	2773.357	Hf II	25	60	—	—
2778.59	Fe	6	1	—	—	2775.551	Mo	10	—	—	—	2773.312	Cr	1	40	—	—
2778.578	V	—	60 h	—	—	2775.451	U	6	4	—	—	2773.31	Rh I	3	2 h	—	—
2778.560	Mn	60	—	—	—	2775.41	Yb	—	2	—	—	2773.241	Pt I	50	5	—	—
2778.502	Re	20	—	—	—	2775.40	U	6	4	—	—	2773.236	Fe	90	40	—	—
2778.49	Ti II	—	30 wh	—	—	2775.400	Mo	80	100 h	—	—	2773.203	Cb	15	10	—	—
2778.449	U	6	2	—	—	2775.355	In I	80	30	Uh	—	2773.115	Re	30	—	—	—
2778.40	Tm	5	10	Me	—	2775.346	Ta	80	15	—	—	2773.11	Rh	—	15	—	—
2778.395	Ce	2	—	—	—	2775.327	Ni II	—	250 wh	—	—	2773.084	U	5	4	—	—
2778.379	Ru	—	150	—	—	2775.266	Hf II	15	15	—	—	2773.069	Os	12	5	—	—
2778.346	Sn II	—	2	—	—	2775.216	U	6	6	—	—	2773.04	In	—	3	Cx	—
2778.288	Mg	25	20	—	—	2775.185	Ru	50	—	—	—	2773.025	Mn	10	—	—	—
2778.221	Fe I	100	80	S	—	2775.181	Co II	30 h	100 h	—	—	2773.022	Ce	2	—	—	—
2778.19	Ho	—	10 h	Ex	—	2775.158	Ce	10	—	—	—	2773.017	Hf	20	3	—	—
2778.15	Rh	2	100	—	—	2775.108	Ta	100 W	80	—	—	2772.963	Ru	30	8	—	—
2778.135	U	4	4	—	—	2775.049	Ne I	—	[5]	Ps	—	2772.927	Ce	2	—	—	—
2778.091	Re	20	—	—	—	2775.047	Cd I	50	20	Hz	—	2772.90	Eu	3	—	—	—
2778.08	Te	—	—	[10]	Bl	2775.019	U	6	8	—	—	2772.829	Pt I	15	2	—	—
2778.073	V I	10	—	—	—	2774.99	Tm	20	40	Me	—	2772.827	Fe	15	4	—	—
2778.071	Fe	30	10	—	—	2774.982	W	2	12	—	—	2772.81	Sm	—	20	—	—
2778.060	Cr	12	60	—	—	2774.968	V	10	20 h	—	—	2772.71	Pb II	—	2	—	—
2778.056	Ce	2	—	—	—	2774.968	Ir	2	5	—	—	2772.696	Co	30 h	—	—	—
2778.055	Rh I	100	3	—	—	2774.96	I	—	[20]	Bl	—	2772.64	Ta	—	[5]	Bl	—
2778.027	Th	3	2	—	—	2774.959	Co I	50	—	—	—	2772.62	Br	—	[3]	Bl	—
2778.016	Cb	—	5	—	—	2774.900	Os	8 s	4 w	—	—	2772.612	Ru	50	—	—	—
2777.89	K II	—	—	[2]	Bn	2774.876	Ta	100	3	—	—	2772.61	Dy	3	—	—	—
2777.877	Ir I	4	—	—	Ab	2774.86	Xe II	—	[10]	Hu	—	2772.60	Kr II	—	[10 h]	Me	—
2777.870	W	2	12	—	—	2774.843	Th	5	4	—	—	2772.596	Ta	15	—	—	—
2777.856	Mo	15	10	—	—	2774.78	Tm	5	15	Me	—	2772.593	U	8	12	—	—
2777.807	Th	10	8	—	—	2774.779	Pt II	10	100 wh	—	—	2772.58	Lu	5	150 h	Me	—

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2772.552	Co I	15 h	-	-	2769.875	Os	20	8	-	2767.49	Cd II	-	[2]	Vs
2772.511	Fe	30	20	-	2769.862	Mo	5	-	-	2767.413	U	-	4	-
2772.483	W	10	60	-	2769.837	Pt I	50	2	-	2767.40	La II	4	8	Me
2772.456	Ir I	15	10	-	2769.81	Gd	20	20	-	2767.349	Zr I	3	-	-
2772.453	Ru	-	150	-	2769.762	Mo	10	100	-	2767.34	Hf II	6	8	-
2772.427	Re	3	-	-	2769.741	W	15	10	-	2767.328	Ir	2	-	-
2772.341	Cr	-	8	-	2769.74	A	-	[20]	Rt	2767.28	Ne I	-	[3]	Ps
2772.34	U	4 d	4 d	-	2769.739	V	6	40	-	2767.277	Cr	-	4	-
2772.33	Fe	50	10	-	2769.69	Al	-	[3]	Sy	2767.224	Mo	20	-	-
2772.326	Ce	3	-	-	2769.672	Hf	-	2	-	2767.208	Cb	1	5	-
2772.324	Hf II	15	20	-	2769.671	Fe I	60	20	-	2767.16	Te	-	[10]	Bl
2772.32	Nd	5	-	-	2769.67	Te I	-	[30]	Bl	2767.151	V	2	30 h	-
2772.181	U	5	8	-	2769.670	Co I	10	-	-	2767.15	Cd	-	[12]	Es
2772.16	Cd	-	[5]	Es	2769.666	Cu II	5 h	400	IBu	2767.141	W	12	1	-
2772.14	Te	-	[10]	Bl	2769.629	Mn	3	10	-	2767.122	Os	10	3	-
2772.109	Fe I	300	300	IJa	2769.61	Br	-	[2]	Bl	2767.10	Tm	5	8	Me
2772.01	V	2	80 h	-	2769.567	Cb	2	30	-	2767.007	Ce	18	-	-
2771.990	Ru	-	5	-	2769.53	Tb	10	10	m	2766.969	W	-	12	-
2771.96	Cd II	-	5	-	2769.5	Cs	-	[2]	Bs	2766.963	Hf	15	1	-
2771.93	Cr	-	12 h	-	2769.41	Cl	-	[4]	An	2766.912	Fe I	90	40	-
2771.925	W	-	12	-	2769.351	Fe II	1	20	-	2766.875	U	10	10	-
2771.912	I	-	[15]	Ke	2769.332	Re	30 w	-	-	2766.85	Co II	-	3 h	-
2771.89	Fe	12	6	-	2769.302	Fe	90	10	-	2766.732	W	8	1	-
2771.884	Pd II	-	5	-	2769.300	Cb	-	15	-	2766.722	Mo	20	1	-
2771.874	U	2	2	-	2769.275	Ce	2	-	-	2766.662	Fe	15	6	-
2771.833	Ta	3 h	100	-	2769.26	Hg II	-	[3]	Nu	2766.660	Pt	10	2	-
2771.775	Mo	5	-	-	2769.145	Fe II	1	15	-	2766.588	Ce	2	-	-
2771.708	Co	9 h	-	-	2769.085	Co	-	35 h	-	2766.556	Re	10	-	-
2771.689	Mo	-	20	-	2768.985	W	18	10	-	2766.549	Ru	-	100	-
2771.666	Pt I	500	15	-	2768.957	Pt	1	4	-	2766.54	Rh	5	150	-
2771.654	Cb	2	20	-	2768.937	V I	30	4	-	2766.540	Cr II	40	300 r	-
2771.621	W	12	5	-	2768.934	Fe II	40	100	-	2766.507	Dy	2	1	-
2771.619	Re	3	-	-	2768.934	Ta	2	30	-	2766.458	La I	4	-	-
2771.612	Ir I	12	4	-	2768.926	Ru	60	200	-	2766.455	V II	40	100 h	-
2771.560	Fe II	1	10	-	2768.878	Cu I	25	1 h	-	2766.403	Re	50 w	-	-
2771.550	U	8	4	-	2768.860	Mo	10	-	-	2766.387	Co I	50	3	-
2771.515	Th	10	10	-	2768.857	U	10	8	-	2766.387	Er	12	2	-
2771.510	Rh I	100	8	-	2768.856	Re I	25	-	-	2766.381	Ce	2	-	-
2771.508	Ce	8	-	-	2768.848	Th	15	15	-	2766.371	Cu I	500	25	IBu
2771.465	Ce	3	-	-	2768.848	Zr II	3	5	-	2766.353	Ne I	-	[3]	Ps
2771.452	Ru	-	4	-	2768.837	Ce	12	-	-	2766.319	W	-	20	-
2771.448	Cr	18	2	-	2768.785	Ni II	-	250 wh	-	2766.27	I	-	[12]	Bl
2771.435	Mn	25	-	-	2768.741	Er	-	2 h	-	2766.258	Mo	30	3	-
2771.404	V	6	50 h	Me	2768.731	Zr II	10	4	-	2766.228	Ru	30	-	-
2771.404	Cb	2	15	-	2768.689	Co	20	-	-	2766.221	Co	50	45	-
2771.358	Ba II	12	8	-	2768.6	Tl	-	2 d	Cx	2766.184	Cb	3	2	-
2771.356	Mo	20	-	-	2768.591	Cr	1	60	-	2766.18	C II	-	2	Fl
2771.32	Yb	2	20	-	2768.556	V	35	150 R	-	2766.157	Mo	-	10	-
2771.289	Cr	-	12	-	2768.522	Ce	3	-	-	2766.156	U	5	4	-
2771.27	Ca	-	4	Ad	2768.50	Gd	3	3	-	2766.117	Ta	40 h	20	-
2771.225	Dy	2	-	-	2768.47	Cd	-	[5]	Es	2766.095	Cs II	-	[2]	Ot
2771.21	U	1 d	4 d	-	2768.46	Mg I	8	-	-	2766.058	Re	10	-	-
2771.184	Fe II	-	50	Do	2768.447	Mn	3	20	-	2766.03	Fe	1	-	-
2771.148	Ce	8	-	-	2768.439	Fe	25	5	-	2765.96	Nd	5 d	-	-
2771.07	Ti	2	2	-	2768.434	Ir I	2	-	-	2765.928	Cb	5	10	-
2771.067	Ru	-	100	-	2768.385	U	6	2	-	2765.874	Ru	-	50	-
2771.05	Tm	15	15	Me	2768.337	Ce	5	3 w	-	2765.863	Cr	-	35	-
2771.001	W	-	10	-	2768.337	Fe II	-	1	-	2765.833	Pd	-	2 h	-
2770.992	V	1	10	-	2768.332	W II	10	20 l	-	2765.74	Lu	20	3	Me
2770.984	Zn I	300	150	Hx	2768.314	V I	9	-	-	2765.70	Fe	7	1	-
2770.93	I	-	[12]	Bl	2768.307	Ta	10	2	-	2765.668	V	50	200 h	-
2770.929	V I	-	-	-	2768.294	Co I	9	-	-	2765.657	W	12	4	-
2770.908	Mo	-	3	-	2768.282	Re	3	-	-	2765.65	Ti II	-	20 wh	-
2770.881	W	25	12	-	2768.27	Yb	-	2	-	2765.639	I	-	[20]	Ke
2770.865	Zn I	300	25	IHz	2768.229	Rh	50	4	-	2765.617	Er	10	1	-
2770.822	Th	10	10	-	2768.17	U	3 d	2 d	-	2765.55	Yb	-	5	-
2770.811	Ce	10	-	-	2768.154	Cr	-	10	-	2765.534	Ce	6	-	-
2770.782	Ta	50 wh	1	-	2768.131	V	12	18	-	2765.495	Fe II	-	5	-
2770.740	U	4	2	-	2768.128	Cb	10	100	-	2765.49	Nd	5	-	-
2770.701	Ru	60	-	-	2768.112	Fe	35	8	-	2765.474	Cr	2	20	HI
2770.701	Fe	20	7	-	2768.1	K	-	[2]	MI	2765.447	Os	10	4	-
2770.582	Mo	-	25	-	2768.094	Mo	10	-	-	2765.443	Mn	3	-	-
2770.52	Br	-	[5]	Bl	2767.99	A	-	[2]	Rt	2765.441	Ru	50	150	-
2770.508	Fe II	-	50	-	2767.88	Bi	4	-	To	2765.400	U	10	10	-
2770.457	Hf II	15	20	-	2767.87	Ti I	400 R	300 R	FI	2765.385	Cs	8	-	-
2770.418	Re I	60	-	-	2767.783	U	2	2 h	-	2765.34	Mg I	8	3	FI
2770.299	Ru	60	3	-	2767.783	Ag	5	1 h	-	2765.336	W	-	10	-
2770.206	W	10	2	-	2767.751	Re	6	-	-	2765.279	Cb	3	10	-
2770.18	Gd	15	2	-	2767.74	Cl	-	[4]	An	2765.21	Ti II	2	3	-
2770.158	Mo	-	8	-	2767.728	Rh I	100	4	-	2765.206	U	1	4	-
2770.098	Os	5	3	-	2767.654	Ir I	6	5 h	-	2765.205	W	8	1	-
2770.06	Ne II	-	[3]	Bn	2767.54	Cr	30	8 d	Ex	2765.133	Ru	-	80	-
2770.044	U	10	12	-	2767.523	Fe I	300	-	S	2765.127	Th	10	8	-
2769.939	Sb	100	75	-	2767.523	Ag II	30	200	-	2765.117	Ce	15	-	-
2769.915	Cr I	400 r	40	-	2767.503	Fe II	10	400 wh	-	2765.096	Mo	15	1	-

2764.9—2757.4 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2764.982	Nd	10	-	-	2762.35	Ba	-	2 h	Py	2759.817	Fe I	100	60	-
2764.98	Ba	-	8	Py	2762.345	W	20	10	-	2759.787	U	6	6	-
2764.95	Cl	-	[4]	Bl	2762.34	Se	-	[10]	Bl	2759.729	Cr	1	15	-
2764.885	Hf II	10	10	-	2762.325	Cb	2	10	-	2759.712	Hg I	20	15	-
2764.83	Rh	15 r	125	-	2762.324	Ne I	-	[3]	Ps	2759.582	Mo	20	1	-
2764.821	Ti II	15	70	-	2762.306	Ru	50	3	-	2759.580	V	2	20 h	-
2764.784	Fe II	-	20	-	2762.244	Ti II	5	12	-	2759.545	La	4	-	-
2764.753	Ta	10 h	3	-	2762.215	Ce	18	-	-	2759.534	W	-	10 l	-
2764.725	Ru	50	1	-	2762.18	A	-	[5]	Rt	2759.53	Yb	-	3	-
2764.707	U	2	8 h	-	2762.12	Ca	-	2 h	Ad	2759.51	Te	-	[5]	Bl
2764.701	Er	3	-	-	2762.104	W	-	4	-	2759.482	Zr I	4	-	-
2764.696	Ce	5	-	-	2762.090	Mn II	2	10 h	Cz	2759.47	Tb	10	10	m
2764.66	A II	-	[10]	Rt	2762.05	Ta	1	40 l	-	2759.415	Th	4	3	-
2764.643	Th	8	8	-	2762.05	Ru	-	2	-	2759.391	Cr	10	35	-
2764.633	Ce	5	-	-	2762.032	Fe I	100	60	-	2759.335	Fe II	2	12	-
2764.562	Cb	3	10	-	2762.028	Ir I	2	4	-	2759.316	Ir I	10	5	-
2764.42	Cs	-	[20]	Bs	2761.97	Hg	-	[40]	Ps	2759.30	Ho	-	10 h	Ex
2764.41	Yb	1	8	-	2761.932	Re	25	-	-	2759.252	I	-	[12]	Ke
2764.397	Ce	3	-	-	2761.911	Zr II	3	4	-	2759.204	Er	-	6	-
2764.350	Cr I	200 r	6	-	2761.905	Er	-	3	-	2759.183	Mo	-	5	-
2764.330	Fe	70	40	-	2761.9	Cs	-	[2]	Bs	2759.161	Cb	-	10	-
2764.293	V	-	10 h	-	2761.813	Fe II	50	200	Bu	2759.156	La II	-	3	-
2764.266	W II	20	60	-	2761.787	Mo	-	10	-	2759.138	Ru	-	20	-
2764.249	U	10	10	-	2761.785	Fe I	200	-	-	2759.086	V	1	2	-
2764.188	Co I	100 r	-	-	2761.776	Sn	10	10	-	2759.054	Ce	2	-	-
2764.142	Ce	2	-	-	2761.757	Ce	2	-	-	2759.033	W	8	3	-
2764.11	Cd	50 h	25	Es	2761.755	Cr I	300 r	35	-	2759.02	Kr II	-	[4 wh]	Me
2764.080	Gd	25	30	-	2761.74	U	4 d	4 h	-	2759.019	Ni II	-	500 wh	-
2764.058	Os	2	1	-	2761.676	Ta	200	150	-	2759.002	Ir	5	5	-
2764.004	W	10	2	-	2761.672	Ce	2	-	-	2758.99	Yb	1	8	-
2763.972	Cr	-	30	-	2761.631	Hf	25	3	-	2758.98	Tm	10	30	Me
2763.935	Os	20	8	-	2761.590	W II	10	25	-	2758.977	Cr	1	40	-
2763.934	Mo	25	1	-	2761.547	Ta	80	-	-	2758.956	U	10	10	-
2763.930	Ti II	2	4	-	2761.542	La I	6	-	-	2758.952	Mn	10	-	-
2763.907	Fe II	1	25	-	2761.533	Mo	40	20	-	2758.90	Ti II	-	10 wh	-
2763.903	Ru	30	1	-	2761.51	Fe	4	-	-	2758.877	W	6	3	-
2763.89	Cd I	100 h	50	-	2761.501	Ce	8	-	-	2758.86	Zn	-	[10]	Vs
2763.88	Cl II	-	[10]	Ks	2761.449	U	5	2	-	2758.821	Os	15	6	-
2763.88	Zn II	-	[3]	Vs	2761.418	Os	50	10	-	2758.814	V	4	10	-
2763.803	Re	50	-	-	2761.415	Ce	20	-	-	2758.813	Zr II	30	30	-
2763.800	He I	-	[20]	Ps	2761.372	Co I	75	5	-	2758.78	Cb	1	100 w	-
2763.722	Ce	2	-	-	2761.37	Yb	2	18	-	2758.711	Re	15	-	-
2763.692	U	2	2	-	2761.357	Mn	5	-	-	2758.69	Cl II	-	[5]	Ks
2763.69	Cu	3 h	2 h	-	2761.30	O	-	[10 h]	Mh	2758.687	W	6	3	-
2763.620	Mo	25	50 h	-	2761.294	Ti II	10	35	-	2758.67	Tb	-	10	Ex
2763.613	Th	10	10	-	2761.26	Rh	1	50	-	2758.652	La II	-	3	-
2763.598	Ce	5	-	-	2761.20	Hf II	-	5 h	Me	2758.64	Ne I	-	[3]	Ps
2763.597	Cb	2	10	-	2761.18	U	6 d	6	-	2758.634	Mo	10	10	-
2763.59	Cr	1	30	-	2761.153	Ta	2 h	-	-	2758.616	Cr	-	30	-
2763.419	Ru	50	15	-	2761.137	W	8	-	-	2758.612	Cb	10	15	-
2763.415	U	8	6	-	2761.13	Rb	-	[5]	Ok	2758.58	Cl	-	[2]	An
2763.41	Fe	2	-	-	2761.111	La II	-	5	-	2758.538	Co I	30	-	-
2763.384	Cb	5	5	-	2761.082	Os	20	5	-	2758.52	P	-	[20]	Gu
2763.370	Ta	25 d	60 d	-	2760.998	Cb	5	5	-	2758.512	V	2	12 h	-
2763.306	Re I	40 w	-	-	2760.930	Mn	80	-	-	2758.51	Fe	2	25 h	-
2763.298	Mo	1	20	-	2760.897	Fe	15	8	-	2758.506	Mo	2	20	-
2763.273	Os	25	10	-	2760.852	Al II	-	[3]	Sy	2758.497	U	6	6	-
2763.23	I	-	[30]	Bl	2760.837	Cr	-	15	-	2758.478	Ir I	3	-	-
2763.224	Pt II	6	15 wh	-	2760.77	Yb	2	18	-	2758.432	U	3	4	-
2763.142	Ru	30	5	-	2760.742	W	8	20	-	2758.434	Ti II	-	15 wh	-
2763.14	Rb	-	[2]	Ok	2760.725	Ru	-	18	-	2758.328	W II	6	12	-
2763.108	Fe I	100	70	I	2760.70	Th	-	6 h	-	2758.310	Ta	200	40	-
2763.092	Pd II	300 r	30 r	-	2760.698	V	25	100 h	-	2758.309	Hf	10	-	-
2763.063	Cr	35	4	-	2760.685	Ta	1	2 h	-	2758.265	Ru	4	8	-
2763.027	Mo	25	1	-	2760.671	Ni II	-	40	-	2758.226	Ir I	10	5 h	-
2763.027	Zr I	6	-	-	2760.586	Ir	4	2	-	2758.18	U	4 d	4 d	-
2762.97	Ne II	-	[10]	Bl	2760.526	Mo	1	30	-	2758.075	Ti I	70	4	-
2762.932	Pd	-	15	-	2760.523	Cr	-	20	-	2758.009	Ru	20	-	-
2762.898	Ce	12	-	-	2760.504	La II	-	3	-	2758.000	Re	60 w	-	-
2762.850	U	15	20	-	2760.396	Th	5	8	-	2757.988	Ta	2 h	-	-
2762.828	Rh I	10	-	-	2760.384	Ce	5	-	-	2757.915	U	6	4	-
2762.778	Fe I	25	10	-	2760.357	Cr	1	18	-	2757.865	Fe	25	10	-
2762.76	Cr	1	5	-	2760.334	U	8	4	-	2757.86	Xe II	-	[20 h]	Hu
2762.716	V	2	12	Me	2760.271	Ce	2	-	-	2757.83	Cd	-	[5]	Es
2762.700	W	9	3	-	2760.167	Ru	20	12	-	2757.808	Ru	50	-	-
2762.697	Mo	25	2	-	2760.124	V II	20	35 h	-	2757.808	Os	25	8	-
2762.687	Hf	10	4	-	2760.11	Zr II	1	2 wh	-	2757.758	U	6	4	-
2762.68	Fe	50	1	-	2760.093	Yt I	10	8	-	2757.753	V I	9	2	-
2762.593	Cr II	40	100	-	2760.054	Cr	1	10	-	2757.723	Cr II	35	150	-
2762.497	W	-	10	-	2760.034	W	8 d	7	-	2757.699	W	-	12	-
2762.489	Cb	2	5	-	2760.006	Mo	10	-	-	2757.694	Pt I	15	-	-
2762.460	Al II	-	[8]	Sy	2759.970	Cb	2	10 h	-	2757.554	U	10	6	-
2762.442	Mo	1	10	-	2759.910	Ir I	10	5	-	2757.506	Cb	2	30	-
2762.441	Fe II	-	10	-	2759.880	Ce	2	-	-	2757.485	Re	20	-	-
2762.426	U	6	1	-	2759.86	F	-	[2]	Di	2757.467	Ce	2	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2757.43	I	-	[12 h]	Bl	2754.18	Ca	1	3	Ad	2751.93	U	2 d	20 h	-
2757.4	Cs	-	[2]	Bs	2754.17	Lu	40	125	Me	2751.88	Cd	-	[5]	Es
2757.395	Ti I	25	2	-	2754.155	U	20	35	-	2751.871	Cr II	20	125	-
2757.320	Fe I	100	60	-	2754.10	Cl II	-	[25]	Ks	2751.812	Hf II	25	80	-
2757.26	A	-	[5]	Rt	2754.09	Rh	1	25	-	2751.811	Fe	15	5	-
2757.260	Cb	3	50	-	2754.073	Cb	3	3	-	2751.810	Cu I	5	-	-
2757.209	W	6	12	-	2754.04	Cl	-	[6]	Bl	2751.786	V	-	2 h	-
2757.186	Ce	2	-	-	2754.037	Fe I	90	35	-	2751.70	Ti II	-	200 wh	Ex
2757.140	U	5	4	-	2753.922	Mo	-	5	-	2751.599	Cr I	30	-	-
2757.125	Ta	5	1	-	2753.92	A	-	[10]	Rt	2751.59	Te	-	[10]	Bl
2757.099	Cr I	300 r	10	-	2753.878	In I	300 R	300 wh	Ps	2751.59	Kr II	-	[5 whl]	Me
2757.095	Mo	5	-	-	2753.856	Pt I	100	4	-	2751.55	Pd II	-	[2 h]	Bx
2757.089	Dy	2	-	-	2753.817	Mo	1	10	-	2751.52	Cl II	-	[5]	Ks
2757.075	Ru	30	-	-	2753.81	Fe	5	-	-	2751.50	Nd	5	2	-
2757.025	Fe II	10	30	-	2753.80	Cd II	-	2	-	2751.472	Mo	50	5	-
2756.927	Cr	-	30 r	-	2753.760	Pt I	15	-	-	2751.45	Yb	2	15	-
2756.911	Hf II	15	40	-	2753.742	Cb	2	5	-	2751.42	I	-	[20]	Bl
2756.835	U	5	2	-	2753.722	Os	8	4	-	2751.39	Zn I	10 h	-	Fl
2756.83	Rh	-	10	-	2753.692	Fe I	70	25	-	2751.37	Fe	15	-	-
2756.798	Ce	10	-	-	2753.688	Re	2	-	-	2751.3	Rn	-	[3]	Wo
2756.79	Cd I	50 h	-	-	2753.67	Yb	-	2 h	-	2751.29	Cu	10 w	-	-
2756.773	W	1	12 s	-	2753.64	Te	-	[10]	Bl	2751.23	Cl	-	[5]	Jv
2756.753	Cr	10	1	-	2753.61	Hf	-	60	Me	2751.228	U	6	4	-
2756.68	Ne II	-	[10]	Bl	2753.553	Cb	2	3	-	2751.215	W	5	4	-
2756.573	V	-	15 h	-	2753.541	Ce	2	-	-	2751.147	Os	8	5	-
2756.57	La	2	-	-	2753.444	Ru	50	50	-	2751.123	Fe II	-	70	-
2756.512	Fe II	10	7	-	2753.404	V	50	200 R	-	2751.11	Cs	-	[2]	Pa
2756.510	Ag II	5	200	-	2753.4	bh B	100	-	L	2751.06	Pd II	-	[2 wh]	Bx
2756.452	Zn I	200	100	IHz	2753.34	Co II	-	4 h	-	2751.036	Ta	20	2 w	-
2756.391	Ru	-	20	-	2753.323	W	1	12	-	2751.02	Au	-	5 h	-
2756.381	V	-	4 h	Me	2753.302	Ce	2	-	-	2750.940	Zr II	6	8	-
2756.334	Fe I	300	100	-	2753.287	Fe II	25	150 h	-	2750.894	Ce	12	-	-
2756.3	Rn	-	[25]	Wo	2753.25	Zr	2 w	2 w	-	2750.878	Fe	60	20	-
2756.30	Cr	1	100	-	2753.210	Ce	2	-	-	2750.77	Tm	10	30	Me
2756.264	Fe I	300	100	-	2753.19	Tm	20	20	Me	2750.764	W	-	12	-
2756.259	Mo	15	-	-	2753.166	W	8	-	-	2750.728	Cr II	30	150	-
2756.112	Ir I	5	5	-	2753.138	Cb	2	80	-	2750.722	Fe I	15	-	-
2756.086	Ce	2	-	-	2753.102	Fe	25	-	-	2750.61	S	-	[8]	Bl
2756.072	Mo	10	50 h	-	2753.092	V	10	-	-	2750.578	Cb	2	30	-
2756.01	Yb	-	3	-	2753.09	Cl	-	[6]	An	2750.534	Ta	20	-	-
2755.962	Ce	2	-	-	2753.073	Ce	6	-	-	2750.51	Pd	-	[2 wh]	Bx
2755.942	W	10	6	-	2753.051	W II	15	10 d	-	2750.48	Yb	20	150	-
2755.82	Ne I	-	[15]	Ps	2753.046	Re I	40	-	-	2750.451	Ce	8	-	-
2755.76	Dy	6	-	-	2753.029	Fe	2	-	-	2750.44	Ho	-	10 h	Ex
2755.739	Ir	3	-	-	2753.006	Cb	5	50 h	-	2750.410	Ta	3 h	10	-
2755.737	Fe II	300	100	I	2752.987	U	6	4	-	2750.40	Yt II	5	8 h	Me
2755.69	W	-	6	-	2752.945	Ce	2	-	-	2750.386	U	6	6	-
2755.661	V	15	-	-	2752.881	Ti II	-	50 wh	-	2750.350	Ru	50	-	-
2755.649	Mn	3	-	-	2752.877	Cr I	300 r	40	-	2750.321	W II	2	12	-
2755.643	Er	20	3	-	2752.875	Ir	2	4 h	-	2750.30	V	-	7 h	-
2755.637	Cb	5	2	-	2752.858	La II	1	10	-	2750.19	Yt	7	1 h	-
2755.58	I	-	[12]	Bl	2752.857	Re	25	-	-	2750.17	Er	15	3	-
2755.565	Cb	1	4	-	2752.84	Hg	40	10 h	-	2750.147	W	12	5	-
2755.413	Ce	8	-	-	2752.839	Rh I	50	2	-	2750.144	Fe I	300 h	100	-
2755.367	Mo	15	10	-	2752.834	In II	-	[5]	Ps	2750.141	Co	15	-	-
2755.31	Br	-	[5]	Bl	2752.775	Hg I	100 R	50	-	2750.140	Ti	30	2	-
2755.289	Cb	5	10	-	2752.766	Ru	50	150	-	2750.13	U	5	4	-
2755.27	Cr	50 d	2	-	2752.743	In II	-	[2]	Ps	2750.029	Mo	2	50	-
2755.265	W	10	4	-	2752.583	Mo	-	4 h	-	2750.01	V	-	2 h	-
2755.233	Ru	-	30	-	2752.548	Hf	-	4	-	2749.964	U	10	12	-
2755.223	Re I	25	-	-	2752.489	Ta	300	300	-	2749.96	Yb	-	8	Me
2755.20	Cs	-	[20]	Bs	2752.451	Ru	50	-	-	2749.954	Ce	5	-	-
2755.18	Fe	15	-	-	2752.445	U	4	12	-	2749.94	Se	-	[15]	Bl
2755.133	U	10	12	-	2752.42	I	-	[12]	Bl	2749.89	B	-	2	Sy
2755.067	V	-	20 h	-	2752.387	Cr	-	10	-	2749.83	Hg II	-	[3]	Ps
2754.95	Fe	25	-	-	2752.35	W II	6	5	-	2749.829	Ta	200	50	-
2754.944	Er	15	1	-	2752.317	Mn	20	-	-	2749.824	Cb	2	8	-
2754.943	Pd	-	5	-	2752.295	Ta	150	8	-	2749.82	Cr	-	20	-
2754.93	Yb	2	3	-	2752.266	Ru I	30	-	-	2749.81	Br	-	[2]	Bl
2754.920	Pt I	200	5 h	-	2752.238	W	2	20 l	-	2749.803	In II	-	[30]	Ps
2754.918	W	12	9	-	2752.21	Te	-	[10]	Bl	2749.712	Th	4	4	-
2754.91	A II	-	[12]	Rt	2752.206	Zr II	40	40	-	2749.705	Ce	2	-	-
2754.907	Fe II	-	18	Do	2752.19	Ag II	2	[4]	Bx	2749.702	In II	-	[50]	Ps
2754.90	Cr	10	-	Ex	2752.172	Th	15	12	-	2749.685	Cb	1	5	-
2754.72	I	-	[20]	Bl	2752.166	Ce	15	-	-	2749.68	Fe	3	-	-
2754.71	W II	-	5	-	2752.16	Eu	20 w	-	-	2749.677	Ru	50	10	-
2754.612	Ru I	50	1	-	2752.159	Fe II	-	10	Do	2749.62	Yb	-	2	-
2754.592	Ge	30	20	-	2752.15	Se	-	[5]	Bl	2749.542	Th	10	8	-
2754.565	U	3	2	-	2752.150	Mo	3	3 h	-	2749.526	Ce	8	-	-
2754.522	Cb	10 w	100	-	2752.132	V	1 h	35 h	-	2749.51	La	3	-	-
2754.426	Fe	70	20	-	2752.105	Ru	-	60	-	2749.484	Fe II	15	20	-
2754.294	Mo	20	20	-	2752.095	Fe	1	20	-	2749.357	Th	3	1	-
2754.28	Cr	3	50	-	2752.073	Co I	40	1	-	2749.324	Fe II	30	30	I
2754.232	Ce	5	-	-	2752.018	Cb	2	5	-	2749.323	Ir I	6	-	-
2754.212	Zr II	3	1	-	2751.94	I	-	[12]	Bl	2749.184	Fe II	40	40	-

2749.1—2740.3 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2749.180	Os	15	6	—	—	2746.301	Mo	30	25	—	—	2743.425	W	12	10	—	—
2749.098	Ru	—	8 h	—	—	2746.209	W	10	7	—	—	2743.156	Ir	—	20 h	—	—
2749.058	Ti I	30	—	—	—	2746.2	Bi II	—	2	Cf	—	2743.378	Ir	2	—	—	—
2749.00	S	—	[8]	—	Bl	2746.180	Cr	—	25	—	—	2743.328	Ce	2	—	—	—
2749.000	W	9	4	—	—	2746.158	U	25	6	—	—	2743.25	Eu	3 d	—	—	—
2748.985	Cr II	35	200	—	—	2746.157	Fe II	—	10	Do	—	2743.196	Fe II	80	150	—	—
2748.863	Os	12	5	—	—	2746.104	Cb	—	50 h	—	—	2743.156	Ir	—	2 h	—	—
2748.86	Al	—	[30 h]	—	Sy	2746.074	Ru	50	8	—	—	2743.068	Mo	15	—	—	—
2748.85	Au II	—	5 r	—	—	2746.059	Er	—	2	—	—	2743.067	Th	12	8	—	—
2748.849	W	12	10	—	—	2746.032	Co I	50	—	—	—	2743.062	Ce	8	—	—	—
2748.849	Cb	10	10	—	—	2745.97	Fe	3	—	—	—	2742.994	Ni II	—	500	—	—
2748.798	Ce	2	—	—	—	2745.901	V	—	35	—	—	2742.96	Tm	15	25	Me	—
2748.778	Ta	400	50	—	—	2745.868	Re	25	—	—	—	2742.919	Ta	2	—	—	—
2748.72	In	—	25 wh	—	—	2745.864	U	5	4 h	—	—	2742.898	W	3	25	—	—
2748.66	Yb	5	30	—	—	2745.855	Zr II	25	25	—	—	2742.890	Mo	1	20	—	—
2748.608	Zr I	2	—	—	—	2745.837	W	10	6	—	—	2742.850	Re	20	—	—	—
2748.58	Cd II	5	200	—	—	2745.834	Ru	50	80	—	—	2742.739	Re	10	—	—	—
2748.576	W	10	3	—	—	2745.82	Fe	8	—	—	—	2742.674	V	25	20	—	—
2748.494	Mo	20	—	—	—	2745.729	Cb	3	50	—	—	2742.603	Pd II	—	100	—	—
2748.451	U	18	15	—	—	2745.723	Ce	10	—	—	—	2742.6	bh C	20	—	L	—
2748.433	W	—	9	—	—	2745.71	Yb	—	3	—	—	2742.60	U	—	6 h	—	—
2748.414	Mo	—	10	—	—	2745.62	W	8	6	—	—	2742.596	Cb	1	20	—	—
2748.317	La II	1	8	—	—	2745.60	Eu	10	—	—	—	2742.56	Kr II	—	[40]	Me	—
2748.308	W	10	12	—	—	2745.57	Rb	—	[2]	Ok	—	2742.557	Zr II	15	25	—	—
2748.294	Ir I	2	—	—	—	2745.57	Te	—	[25]	Bl	—	2742.50	Yt I	4	—	—	—
2748.286	Cr I	300	5	—	—	2745.565	Ta	2 h	—	—	—	2742.469	W	5	25	—	—
2748.26	Au I, II	400	80	—	—	2745.550	Mn	15	—	—	—	2742.42	Rb	—	[2]	Ok	—
2748.18	Cs	—	[20]	—	Bs	2745.47	Pb	—	5 h	Sx	—	2742.410	V	35	20	—	—
2748.072	Cb	1	15	—	—	2745.452	Cu I	8	150	—	—	2742.408	Fe I	50	50	—	—
2748.03	Yb	—	2	—	—	2745.427	Cr	—	12	—	—	2742.349	Ru	4	50	—	—
2748.021	Ce	2	—	—	—	2745.384	Mo	20	—	—	—	2742.324	Ti II	30	40 whl	—	—
2747.972	Ru	50	100	—	—	2745.323	W	6	3	—	—	2742.256	Fe I	25	25	—	—
2747.93	U	—	4 d	—	—	2745.302	Cb	5 w	30 w	—	—	2742.25	Tb	10	—	m	—
2747.926	Cr	—	6	—	—	2745.276	Cu II	30	30	—	—	2742.171	Cr	30	3	—	—
2747.9	In	—	2	Cx	—	2745.272	Mo	5	5 h	—	—	2742.060	U	5	2	—	—
2747.853	Th	6	3	—	—	2745.249	Ru	12	150	—	—	2742.030	Cr II	15	50	—	—
2747.848	Ta	10	2	—	—	2745.107	W	9	—	—	—	2742.017	Fe I	35	15	—	—
2747.84	Eu	12 W	—	—	—	2745.100	Co I	50	60	—	—	2741.967	Re	10	—	—	—
2747.833	W	12	5	—	—	2745.088	Mo	20	1	—	—	2741.957	Ce	12	—	—	—
2747.833	Ce	2	—	—	—	2745.082	Fe	10	1	—	—	2741.901	W	—	10	—	—
2747.73	Nd	5	—	—	—	2745.080	U	10	—	—	—	2741.828	Fe	1	—	—	—
2747.7	Rn	—	[7]	—	Pe	2745.076	Ru	30	—	—	—	2741.809	Ti I	3	—	—	—
2747.692	Ru	8	25	—	—	2745.028	W II	2	25	—	—	2741.75	Cl	—	[5]	An	—
2747.68	Fe	2	—	—	—	2745.007	Ce	5	—	—	—	2741.748	U	18	6	—	—
2747.63	Rh	1	100	—	—	2744.991	As I	8 R	8	Ro	—	2741.72	Yb	2	15	—	—
2747.609	Pt I	150	2	—	—	2744.977	Cr	—	20	—	—	2741.621	U	5	2	—	—
2747.600	Cb	—	10	—	—	2744.965	Cb	1	5 w	—	—	2741.618	Mo	5	25	—	—
2747.57	Yb	2	15	—	—	2744.903	W	8	—	—	—	2741.58	Fe	4	1	—	—
2747.557	Fe I	30	5	—	—	2744.894	Fe II	—	2	—	—	2741.575	Ce	3	—	—	—
2747.542	V I	10	5	—	—	2744.846	Ti I	30	—	—	—	2741.567	V	2	10	—	—
2747.513	Ir	5	1 h	—	—	2744.830	Pt	5 r	1 h	—	—	2741.550	Zr II	10	8	—	—
2747.50	O II	—	[25]	—	Mh	2744.82	A	—	[20]	Rt	—	2741.521	Ce	3	—	—	—
2747.475	V	6	60	—	—	2744.79	Br	—	[2]	Bl	—	2741.397	Fe II	—	70	—	—
2747.438	Re I	30	—	—	—	2744.591	Cr	—	40	—	—	2741.384	Ta	5	2	—	—
2747.41	Kr	—	[2 whl]	—	Me	2744.541	V	2	20	—	—	2741.38	As	—	2	Ro	—
2747.376	Cb	1	5	—	—	2744.540	Ce	4	—	—	—	2741.319	Mo	2	20	—	—
2747.362	U	8	10	—	—	2744.527	Fe I	70	50	—	—	2741.31	Li I	200	—	Fl	—
2747.31	C II	—	40	Fl	—	2744.50	I	—	[12]	Bl	—	2741.20	W	—	8	—	—
2747.29	Te	—	[5]	Bl	—	2744.450	Ru	30	50	—	—	2741.188	Li II	—	30	Da	—
2747.28	Eu	20 w	—	—	—	2744.447	Cb	1	10	—	—	2741.168	Ta	—	5	—	—
2747.251	Ta	50	5	—	—	2744.404	U	12	10	—	—	2741.147	Cb	4	10	—	—
2747.161	Th	10 d	5 d	—	—	2744.274	U	4	10	—	—	2741.11	Fe	10	3	—	—
2747.16	Br	—	[2]	Bl	—	2744.255	Eu	20	—	—	—	2741.09	A	—	[2]	Rt	—
2747.155	Ce	12	—	—	—	2744.212	Re I	6 w	—	—	—	2741.068	Cr	35	30	—	—
2747.15	U	—	4 d	—	—	2744.193	Mo	2	25	—	—	2741.065	U	6	6	—	—
2747.145	Mo	—	10	—	—	2744.13	Er	2	2 h	—	—	2741.01	Sb	—	2	—	—
2747.018	W	12	10	—	—	2744.09	Tm	20	50	Me	—	2740.975	V	—	15 h	—	—
2746.982	Fe II	200	300 wh	I	—	2744.072	Fe I	150	8	—	—	2740.965	Mo	8	—	—	—
2746.914	Cb	5	20	—	—	2743.998	Ir I	12	2	—	—	2740.867	Ti I	6	—	—	—
2746.892	Mo	8	2	—	—	2743.936	Ru	50	100	—	—	2740.859	U	12	8	—	—
2746.746	Ni I	125	50	—	—	2743.899	Ag II	—	50	—	—	2740.8	Rn	—	[3]	Pe	—
2746.735	W	12	20	—	—	2743.871	Re	25	—	—	—	2740.791	W	5	25	—	—
2746.71	Ti II	—	150 wh	—	—	2743.774	V	7	30	—	—	2740.753	Os	8	5	—	—
2746.697	Ru	—	4 h	—	—	2743.714	Mo	30	1	—	—	2740.71	Dy	3	—	—	—
2746.681	Ta	100	5	—	—	2743.674	Ir I	3	—	—	—	2740.67	Cs II	—	[8]	Bs	—
2746.66	U	2 d	1 d	—	—	2743.661	U	4	8	—	—	2740.628	Eu	20	10	—	—
2746.654	Ce	3	—	—	—	2743.643	Cr II	30	125	—	—	2740.607	Os	10	8	—	—
2746.617	Hf	3	—	—	—	2743.638	Hf	15	1	—	—	2740.577	Ce	3	—	—	—
2746.562	Ce	2	—	—	—	2743.586	Ta	—	8	—	—	2740.563	Mn	3 h	—	—	—
2746.50	I	—	[12]	—	Bl	2743.565	Fe	50	15	—	—	2740.552	Rh I	40	2	—	—
2746.50	C II	—	25	—	Fl	2743.55	K II	—	[5]	Bn	—	2740.508	Zr II	5	5	—	—
2746.483	Fe II	150	300 wh	I	—	2743.534	Ru	50	50	—	—	2740.459	Co I	50	4	—	—
2746.38	Te	—	[5 h]	—	Bl	2743.53	Ne I	—	[15]	Ps	—	2740.431	Ge	10	10	m	—
2746.36	Bi II	—	2	—	Cf	2743.491	Pt II	6	40 h	—	—	2740.417	Hf II	4	2 wh	—	—
2746.31	Kr II	—	[15]	—	Me	2743.478	Cb	1	20	—	—	2740.39	Pt II	—	4 h	Sh	—

Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis]	R
2740.37	Te	—		[10]	Bl	2737.49	I	—		[20]	Bl	2734.770	W	10		20	—
2740.352	Zr	II	3	3	—	2737.475	Ru	12	—	—	—	2734.732	Cb	—		10	—
2740.330	Ir	—	1	4 h	—	2737.416	Th	8	—	—	—	2734.729	Mn	10	—	—	—
2740.321	Os	15	8	—	—	2737.414	Ce	2	—	—	—	2734.71	U	2 hd	—	4 h	—
2740.305	U	2	2	—	—	2737.400	Rh	30	400 wh	—	—	2734.68	Co	II	—	3 h	—
2740.223	Ru	30	—	—	—	2737.371	W	—	20	—	—	2734.619	Fe	I	20	8	—
2740.211	Ta	100	10 h	—	—	2737.331	Cu	II	4	—	—	2734.564	Cr	—	—	10	—
2740.208	Rh	I	40	2	—	2737.314	Fe	I	300 r	150	—	2734.517	Ta	15	—	—	—
2740.184	Cb	3	50	—	—	2737.31	Cr	10	—	—	—	2734.513	Ir	I	3	—	—
2740.177	Ir	I	4	—	—	2737.309	Ir	12	5 h	—	—	2734.498	Pt	I	100	10	—
2740.176	W	—	1	12	—	2737.27	S	—	—	[8]	Bl	2734.389	Ce	8	—	—	—
2740.095	Cr	II	20	60	—	2737.094	Cr	—	10	—	—	2734.374	Mo	—	—	5	—
2740.077	Ir	—	2	—	—	2737.088	Cb	5	100	—	—	2734.354	Th	10	—	10	—
2740.068	Mo	—	1 h	4 whl	—	2737.071	U	5	6	—	—	2734.350	Cb	5	80	—	—
2740.0	bh	C	12	—	L	2737.057	Ce	2	—	—	—	2734.349	Ru	80	200	—	—
2739.997	Ir	I	5	—	—	2737.006	Mn	8	10	—	—	2734.318	Re	20	—	—	—
2739.950	Re	25	—	—	—	2736.968	Fe	I, II	7	—	—	2734.30	V	—	—	15 h	—
2739.923	Rh	10	300	—	—	2736.960	Mo	25	30	—	—	2734.273	Fe	I	40	25	—
2739.90	P	—	[10]	Gu	—	2736.90	La	II	3	2	Me	2734.14	Xe	II	—	[25]	Hu
2739.807	Ti	I	50	3	—	2736.86	Zn	I	10 wh	—	Fl	2734.089	Sc	6 d	12	—	—
2739.771	Zr	II	—	2	—	2736.84	Te	—	—	[5]	Bl	2734.08	Yb	1	4	—	—
2739.764	Cu	II	—	12	—	2736.812	Ru	30	60	—	—	2734.077	Ce	3	—	—	—
2739.760	Cr	—	—	12	—	2736.8	Rn	—	—	[7]	Pe	2734.004	Fe	I	40	25	—
2739.711	V	50	80	—	—	2736.78	Fe	10 h	2 h	—	—	2733.967	U	10	15	—	—
2739.548	Pd	—	2	—	—	2736.761	Rh	I	100	3	—	2733.961	Pt	I	1000 h	200 h	—
2739.546	Fe	II	200	300 h	I	2736.72	Mg	8	2	m	—	2733.95	Ho	—	—	10	Ex
2739.394	U	10	10	—	—	2736.699	V	1	20	—	—	2733.905	V	15	25	—	—
2739.383	Cr	35	25	—	—	2736.680	Ti	I	12	—	—	2733.879	Cs	II	—	[2]	Ot
2739.373	W	—	10	—	—	2736.648	Mo	—	4	—	—	2733.86	Cd	I	50	25	—
2739.32	P	—	[25]	Gu	—	2736.575	W	—	15	—	—	2733.837	Mo	10	—	—	—
2739.318	Ir	I	8	2 h	—	2736.57	Yb	—	2	—	—	2733.772	W	10	7 d	—	—
2739.306	Er	20	4	—	—	2736.533	Mg	I	30	3	—	2733.772	U	6	6	—	—
2739.269	La	3	—	—	—	2736.531	Ca	—	6	—	—	2733.737	Cb	2	50	—	—
2739.265	Ta	2	80	—	—	2736.528	Fe	II	2	3	—	2733.691	Pt	15	5 h	—	—
2739.238	Cb	—	50	—	—	2736.521	Cb	1	3 w	Me	—	2733.667	Ta	10 w	1	—	—
2739.236	Ba	—	10	—	—	2736.484	Ru	12	80	—	—	2733.61	Rb	—	—	[5]	Ok
2739.218	Ru	I	60	5	—	2736.473	Cr	I	300 r	50	—	2733.592	Ru	80	4	—	—
2739.207	V	—	15 h	—	—	2736.417	Mo	5	10	—	—	2733.584	Fe	I	300	200	—
2739.124	W	—	10	—	—	2736.414	Ir	I	3	—	—	2733.57	Mg	I	25	—	—
2739.080	U	8	8 h	—	—	2736.41	La	II	—	3	Me	2733.463	Cb	3	40	—	—
2738.96	Co	—	20	—	—	2736.326	Ce	10	—	—	—	2733.456	Zr	4	—	—	—
2738.892	Ru	60	2	—	—	2736.319	Ru	12	—	—	—	2733.443	W	—	10	—	—
2738.862	Mn	25	—	—	—	2736.314	U	5	4 h	—	—	2733.40	O	II	—	[150]	Mh
2738.805	Ce	2	—	—	—	2736.250	Ta	300 s	8 s	—	—	2733.388	Mo	U	30	8	—
2738.80	Yb	—	2	—	—	2736.24	Tb	10	3	m	—	2733.374	U	3	4	—	—
2738.760	Hf	II	40	100	—	2736.177	Ne	I	—	[5]	Ps	2733.363	Ce	2	—	—	—
2738.749	Re	6	—	—	—	2736.13	V	—	9 h	—	—	2733.363	Fe	2	1	—	—
2738.711	Ti	II	—	25 wh	—	2736.0	K	—	—	[20]	Sg	2733.36	Nd	5	2	—	—
2738.638	Ce	4	—	—	—	2735.978	U	3	2 h	—	—	2733.34	Se	—	—	[5]	Bl
2738.605	Mo	1	40	—	—	2735.970	W	10	4	—	—	2733.340	V	I	10	1	—
2738.566	U	3	2	—	—	2735.952	Cb	—	40	—	—	2733.32	He	II	—	[100]	Ps
2738.56	Eu	7	1 h	—	—	2735.883	Mo	10	2	—	—	2733.30	As	—	—	[2]	Ro
2738.514	W	2	9	—	—	2735.781	W	1	9	—	—	2733.26	Kr	—	—	[50]	Me
2738.50	Te	—	[5 h]	Bl	—	2735.769	U	4	2	—	—	2733.259	Ti	I	60	15	—
2738.50	Er	—	2	—	—	2735.76	Hf	II	—	5 h	Me	2733.259	Cb	30	50	—	—
2738.484	Pt	I	100	5	—	2735.756	Cr	—	8	—	—	2733.231	Mo	10	—	—	—
2738.45	Fe	8	1	—	—	2735.755	Pt	II	1	10	—	2733.183	W	15	9	—	—
2738.44	I	—	[20]	Bl	—	2735.718	Ru	60	60	—	—	2733.15	Xe	II	—	[12 hs]	Hu
2738.43	Zn	II	—	[10]	Vs	2735.69	Ne	I	—	[8]	Ps	2733.117	Mo	—	—	5	—
2738.41	U	5 d	4 d	—	—	2735.653	Mo	3	5	—	—	2733.087	Ru	10	—	—	—
2738.328	Re	20	—	—	—	2735.614	Fe	I	20	10	—	2733.08	I	—	—	[12]	Bl
2738.316	Ce	2	—	—	—	2735.612	Ti	I	20	4	—	2733.06	A	—	—	[5]	Rt
2738.268	Rh	I	10	2	—	2735.580	U	10	6	—	—	2733.042	Re	40 w	—	—	—
2738.213	Fe	I	10	2	—	2735.475	Fe	I	125	100	S	2732.98	Hf	II	—	10 Wh	Me
2738.17	Lu	2	25 hl	Me	—	2735.33	Tm	6	—	—	Me	2732.951	U	6	4	—	—
2738.16	Se	II	—	[10]	Bl	2735.326	U	—	4	—	—	2732.936	Fe	—	—	40	Do
2738.13	U	8 d	8 d	—	—	2735.307	Mo	—	10	—	—	2732.924	Ta	100 W	5	—	—
2738.09	Be	I	10	—	Ps	2735.289	Ti	I	30	4	—	2732.893	V	10	12 h	—	—
2738.077	V	I	2	1	—	2735.246	Eu	15	—	—	—	2732.880	Mo	20	30	—	—
2737.999	W	12	6	—	—	2735.168	Ne	I	—	[3]	Ps	2732.827	Ce	20	—	—	—
2737.90	Te	—	[25]	Bl	—	2735.155	Mo	8	—	—	—	2732.815	Th	10	8	—	—
2737.89	U	4 d	2 d	—	—	2735.12	Hf	II	6	3	Me	2732.814	W	10	4 l	—	—
2737.880	Zr	4	—	—	—	2735.052	Ir	I	2	—	—	2732.805	Os	75	15	—	—
2737.888	Mo	12	20	—	—	2735.0	N	II	—	[3 h]	Fl	2732.73	Yb	6	30	—	—
2737.834	Fe	25	10	—	—	2734.97	Yt	II	5	15	—	2732.721	Zr	II	40	30	—
2737.832	Hf	10	4	—	—	2734.97	Fe	4	—	—	—	2732.689	Ce	2	—	—	—
2737.792	Ru	—	60	—	—	2734.964	U	6	6	—	—	2732.68	Hf	II	10	15	Me
2737.760	W	—	6	—	—	2734.888	Fe	5	—	—	—	2732.670	Ir	20	2 h	—	—
2737.65	U	2 d	2 d	—	—	2734.885	Re	15	—	—	—	2732.650	Mo	—	—	10	—
2737.642	Fe	10	—	—	—	2734.855	Zr	II	40	40	—	2732.60	Hg	II	—	[12]	Ps
2737.634	Fe	II	—	10	—	2734.85	Cs	—	—	[2]	Ot	2732.60	Eu	12	—	—	—
2737.61	Yb	—	2	—	—	2734.836	Ce	2	—	—	—	2732.56	Ca	—	—	4	Ad
2737.605	Rh	30	2	—	—	2734.82	Ca	8	2	Sd	—	2732.555	U	4	—	2	—
2737.595	Ru	—	50	—	—	2734.803	Fe	—	5	Do	—	2732.53	A	—	—	[20]	Rt
2737.50	La	2	—	—	—	2734.8	Rn	—	—	[7]	Pe	2732.448	Fe	II	8	20	—

2732.4—2724.0 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2732.415	La II	1	10	—	2729.915	Pt I	500	50	—	2727.05	Br	—	[15]	Bl
2732.407	Ir	—	5 h	—	2729.877	La I	4	—	—	2727.022	Zr I	10	—	—
2732.404	Ce	2	—	—	2729.828	Cb	3	1	—	2727.01	Tb	—	10	Ex
2732.374	W II	—	10	—	2729.813	V I	2	—	—	2726.98	Zr II	1 w	2 w	—
2732.36	Pd II	—	[3]	Bx	2729.737	Cr	—	12	—	2726.973	Mo	10	100	—
2732.33	Kr II	—	[4 h]	Me	2729.683	Mo	15	60	—	2726.973	Ru	60	10	—
2732.25	Rb	—	[2]	Ok	2729.683	Ce	6	—	—	2726.93	Cd	—	[15]	Es
2732.211	Re	40	—	—	2729.639	Re	20	10	—	2726.802	Cs II	—	—	Ot
2732.21	V	—	25 h	—	2729.625	W II	10	25 d	—	2726.78	Pd II	—	[2]	Bx
2732.17	W	—	10 d	—	2729.57	Hg II	—	[12]	Ps	2726.78	Fe	2	—	—
2732.166	Ce	10	—	—	2729.557	Ir I	12	2	—	2726.699	Hf	15	—	—
2732.145	Hg II	—	[2]	Ps	2729.538	Ce	2	—	—	2726.685	U	5	2	—
2732.13	Ti	—	25 wh	—	2729.500	Ta	5	—	—	2726.648	Mo	12	—	—
2732.08	Mg I	12	3	—	2729.49	Yb	—	2	—	2726.547	V	7	80	—
2732.07	Pd II	—	[5]	Bx	2729.48	I	—	[12]	Bl	2726.518	U	5	2	—
2732.063	Ta	40	3	—	2729.46	Kr II	—	[30 h]	Me	2726.511	Cr I	300 r	40	—
2732.035	Ce	8	—	—	2729.455	Ru	60	—	—	2726.509	Fe II	—	15	Do
2732.01	Au II	—	30	—	2729.417	Mn	12	—	—	2726.493	Zr II	50	50	—
2732.005	Fe II	—	40	—	2729.39	Eu II	100 d	60	—	2726.490	Th	10	5	—
2732.0	K	—	[2]	MI	2729.374	Cb	2 d	5	—	2726.482	Ce	2	—	—
2731.94	B	—	2	Sy	2729.330	Th	10	12	—	2726.475	Ir I	8	5	—
2731.912	Ce	2	—	—	2729.322	Ce	8	—	—	2726.424	W II	2	5	—
2731.908	Cr I	300 r	30	—	2729.275	Ta	10	—	—	2726.410	Pt II	4	20	—
2731.901	Ru	50	—	—	2729.262	U	8	4	—	2726.371	Ce	2	—	—
2731.9	Rn	—	[3]	Pe	2729.19	P	—	[10]	Gu	2726.36	Te	—	[30]	Bl
2731.869	Ir I	3	—	—	2729.162	Ce	8	—	—	2726.319	Ta	15	1	—
2731.810	Pd II	—	5	—	2729.15	Se	—	[5]	Bl	2726.27	In	—	2	Cx
2731.8	Cs	—	[2]	Bs	2729.149	W	1	12	—	2726.263	W	10	3	—
2731.796	W	—	5 wh	—	2729.134	Mo	20	1	—	2726.255	Ir I	4	—	Ab
2731.707	Ce	3	—	—	2729.100	Hf	10	8	—	2726.254	Fe	—	8	Do
2731.61	Pd II	—	[50]	Bx	2729.065	U	3	6 h	—	2726.241	Cr	—	15	—
2731.583	Th	5	4	—	2729.05	Tm	20	6	Me	2726.240	Fe	25	12	—
2731.578	Ti I	30	1	—	2728.972	Fe I	15	5	—	2726.230	Er	15	1	—
2731.559	Re	10 w	—	—	2728.95	Lu	40	2	Me	2726.144	Ce	10	—	—
2731.528	Ne I	—	[3]	Ps	2728.945	Rh I	200	200	—	2726.139	Mn	300 Wh	—	—
2731.519	V	20 h	—	—	2728.915	Th	6	4	—	2726.080	Cb	3	2	—
2731.407	Ce	2	—	—	2728.905	Fe	3	5	—	2726.054	Fe	100	80	—
2731.36	Pd II	—	[5]	Bx	2728.902	Ce	2	—	—	2725.950	Mo	15	—	—
2731.358	Ce	2	—	—	2728.873	W II	—	10	—	2725.942	U	12	12	—
2731.358	Ne I	—	[3]	Ps	2728.834	Ru	60	—	—	2725.922	Mn	—	50	—
2731.349	Fe	4	1	—	2728.826	Be II	—	8	—	2725.81	Fe	4	2	—
2731.346	V I	80	50	—	2728.825	Fe	50	15	—	2725.781	Ti II	5	35	—
2731.32	Eu	12	—	—	2728.80	P	—	[20]	Gu	2725.606	Fe I	15	5	—
2731.28	Fe	4	1	—	2728.73	Ag II	—	[5]	Bx	2725.586	La I	10	—	—
2731.266	U	15	8	—	2728.704	Mo	20	25	—	2725.523	U	10	6 h	—
2731.16	V	—	2 wh	—	2728.640	V	50	400 R	—	2725.467	Zr I	12	—	—
2731.142	Hf II	8	10	—	2728.627	Re	20	—	—	2725.466	Ru	80	200	—
2731.131	Ti I	20	—	—	2728.608	Mn	—	50	—	2725.424	Ta	20 w	100	—
2731.124	W	10	—	—	2728.485	Ce	2	—	—	2725.33	Fe	8	4	—
2731.115	Co	50 W	15	—	2728.45	Br	—	[5]	Bl	2725.325	Ce	3	—	—
2730.984	Fe I	70	15	—	2728.410	Ir I	4	—	—	2725.29	Fe I	8	4	—
2730.981	Ti II	—	40 wh	—	2728.4	Li II	—	[2]	Wr	2725.170	Ce	6	—	—
2730.932	Ru I	80	5	—	2728.337	Mo	15	—	—	2725.147	Mo	20	4	—
2730.929	Mo	1	10	—	2728.272	Os	12	5	—	2725.094	Ta	15 l	1	—
2730.852	Hf	15	—	—	2728.26	Cd	—	[5]	Es	2725.070	U	8	6	—
2730.847	W	—	9	—	2728.178	Mo	—	10	—	2725.069	Ti I	30	4	—
2730.829	Re	15	—	—	2728.162	Cr	—	25	—	2725.066	V I	7	2	—
2730.800	Ce	6	—	—	2728.082	Mn	—	5	—	2725.057	W	12	9	—
2730.738	Fe II	80	150	—	2728.078	Cb	3	1	—	2725.00	Zr I	8 w	—	—
2730.712	Ir I	20	5	—	2728.021	Fe	100	40	—	2724.959	Fe I	25	15	—
2730.71	Rh	2	10	—	2727.960	Ce	3	—	—	2724.955	Cb	1	4	—
2730.71	Hf	4	—	—	2727.950	W	12	3	—	2724.948	Ce	10	—	—
2730.699	Ce	4	—	—	2727.934	V	—	7	—	2724.886	Th	10	8	—
2730.672	Ru	—	8	—	2727.92	Co II	—	15 wh	—	2724.885	Fe II	15	25	—
2730.521	Ce	2 w	—	—	2727.891	Pd II	—	200	—	2724.875	Ru	—	100	—
2730.505	Bi I	200	100	Om	2727.82	Sn II	—	[8]	Mc	2724.86	P	—	[20]	Gu
2730.407	Ir I	2	—	—	2727.801	Mo	—	3	—	2724.84	A	—	[2]	Rt
2730.4	Rn	—	[2]	Pe	2727.80	Cs	—	[2]	Bs	2724.81	Lu	—	4	Me
2730.36	S	—	[8]	Bl	2727.780	Eu	300 l	500	—	2724.796	Ir	4	5 h	—
2730.328	Ru I	60	2	—	2727.778	Ta	200	40	—	2724.765	Ne I	—	[3]	Ps
2730.318	Cb	2	200	—	2727.74	Sm	6 d	5 d	—	2724.68	Fe	10	2	—
2730.310	U	18	8	—	2727.7	Rn	—	[12]	Pe	2724.660	V	3	—	—
2730.267	W	8	6	—	2727.685	Ce	3	—	—	2724.63	W	—	10 h	—
2730.258	Ce	2	—	—	2727.546	Re	30	—	—	2724.627	W	10	8	—
2730.197	Mo	2	60	—	2727.54	La II	2	2	—	2724.449	Mn	2	80	—
2730.16	Fe	1	—	—	2727.539	Fe II	150	150	I	2724.42	U	6	6	—
2730.138	La	2 h	—	—	2727.437	Ta	50	150	—	2724.417	Hg I	—	20	Ss
2730.131	I	—	[50]	Ke	2727.433	Cb	2	10	—	2724.413	Mo	4	—	—
2730.093	Er	8	1	—	2727.418	Ti I	35	7	—	2724.352	W	20	10	—
2730.089	Yt I	10	2 h	—	2727.384	Fe II	1 h	40	—	2724.349	Ta	10	—	—
2730.076	Ce	2	3	—	2727.335	U	8	6	—	2724.25	Te	—	[30]	Bl
2730.069	U	2	15 h	—	2727.331	W	—	5	—	2724.18	I	—	[30 l]	Bl
2730.03	Fe	8	1	—	2727.257	Cr	4	70	—	2724.167	Mn	—	3	—
2729.936	W	1	15	—	2727.24	Th	2 h	4	—	2724.097	U	3	2	—
2729.932	Zr II	1	2	—	2727.21	Sb	30	30	—	2724.08	W	2	15	—

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2724.071	Ce	2	—	—	—	2721.192	Tm	60	100	Me	—	2718.635	Fe II	—	—	6	—
2724.063	Ru	60	4	—	—	2721.186	Ce	4	—	—	—	2718.618	U	3	—	2	—
2724.04	Cr	1	40	—	—	2721.163	U	3	6	—	—	2718.588	Hf	15	—	1	—
2724.03	Cl	—	—	[5]	Jv	2721.156	Cb	2	5	—	—	2718.544	Rh I	150	20	—	—
2724.018	Mo	1	25 h	—	—	2721.142	V	35	12	—	—	2718.51	Hf II	10	20	Me	—
2723.984	Cb	10	2	—	—	2721.132	Ce	4	—	—	—	2718.435	Fe I	80	60	I	—
2723.953	Cu I	50	1 h	—	—	2721.12	Fe	3	2	—	—	2718.42	Br	—	—	[5]	Bl
2723.951	W	10	—	—	—	2721.001	Ir I	3	—	—	Ab	2718.383	Ta	80	—	—	—
2723.95	Cs	—	—	[8]	Bs	2721.0	Rn	—	—	[3]	Wo	2718.38	Ca	—	5	Ad	—
2723.932	V I	2	—	—	—	2720.932	Cb	3	5	—	—	2718.34	Yb	5	30	—	—
2723.92	Eu	30	—	—	—	2720.918	Al II	—	—	[3]	Sy	2718.30	Cl	—	—	[4]	An
2723.888	Ce	2	—	—	—	2720.905	Fe I	700 r	—	—	—	2718.29	Se	—	—	[5]	Bl
2723.858	Re	20	—	—	—	2720.780	V	—	7	—	—	2718.279	Zr I	3	—	—	—
2723.847	Ta	2	15 h	—	—	2720.756	Ta	150	1	—	—	2718.145	Mo	—	2	—	—
2723.791	U	1	4	—	—	2720.74	Er	4	—	—	—	2718.087	Ce	4	—	—	—
2723.79	Fe	3	1	—	—	2720.686	Cr	—	20	—	—	2718.070	Cr	8	6	—	—
2723.755	Ir I	15	3	—	—	2720.67	U	—	4 d	—	—	2718.042	W II	10	20	—	—
2723.707	W	—	7	—	—	2720.658	Re	15	—	—	—	2717.98	Rh	—	50	—	—
2723.697	Zr	2	—	—	—	2720.612	W II	6	12	—	—	2717.90	Hf II	—	6	Me	—
2723.68	U	3 w	2 w	—	—	2720.523	Rh I	50	2	—	—	2717.861	Ru	—	50	—	—
2723.662	Cb	2	200	—	—	2720.521	Eu	10	4	—	—	2717.790	Fe	50	25	—	—
2723.63	Cr	—	35	—	—	2720.52	Fe	8	5	—	—	2717.785	Mo	10	—	—	—
2723.577	Fe I	300	200	S	—	2720.451	Ir I	12	5	—	—	2717.699	W II	4	10	—	—
2723.459	V	—	12	—	—	2720.44	Br	—	—	[15]	Bl	2717.66	Yb	—	2	—	—
2723.381	Ce	8	—	—	—	2720.43	I	—	—	[20]	Bl	2717.655	Ir I	2	—	—	—
2723.361	Re	15	—	—	—	2720.404	W II	4 d	18	—	—	2717.629	Cb	2	20	—	—
2723.353	Mo	2	10	—	—	2720.403	U	4	2	—	—	2717.624	Pt II	4	40	—	—
2723.34	U	—	4	—	—	2720.352	Zr II	4	4	—	—	2717.557	U	8	4	—	—
2723.323	Th	—	4	—	—	2720.261	Cb	2	5	—	—	2717.531	W	9	1	—	—
2723.309	Ce	10	—	—	—	2720.26	Cr	1	30	—	—	2717.512	Rh I	100	5	—	—
2723.274	Ta	20	—	—	—	2720.2	Cd	—	—	[2]	Es	2717.51	Br	—	—	[2]	Bl
2723.23	Er	—	5	—	—	2720.199	Fe	35	25	—	—	2717.509	Cr II	12	40	—	—
2723.218	W	12	20	—	—	2720.199	Cu I	18	—	—	—	2717.5	Pb II	—	—	[20]	Ea
2723.191	He I	—	[10]	Ps	—	2720.171	Mo	25	1	—	—	2717.484	Zr I	5	—	—	—
2723.103	Ru	—	50	—	—	2720.137	Rh	100	6	—	—	2717.436	V I	2	3	—	—
2723.091	Al II	—	[8]	Sy	—	2720.124	Ce	2	—	—	—	2717.399	Ru	50	100	—	—
2723.06	I	—	[20]	Bl	—	2720.07	Cr	5	35	—	—	2717.37	Pb	—	2 h	Sx	—
2723.030	U	6	4	—	—	2720.045	W	9	3	—	—	2717.367	Fe	15	5	—	—
2722.998	Yt I	10	8	—	—	2720.044	Os	75	15	—	—	2717.360	La	2	—	—	—
2722.824	Ru	10	—	—	—	2720.022	Cb	3	—	—	—	2717.352	Mo	20	100	—	—
2722.808	U	3	2	—	—	2720.00	In I	10 h	—	—	Fl	2717.35	Xe	—	—	[15]	Hu
2722.806	W II	8	25	—	—	2719.979	Ce	12	—	—	—	2717.329	Cb	2	20	—	—
2722.749	Cr II	30	80	—	—	2719.939	Th	8	5	—	—	2717.303	Ti II	4	35	—	—
2722.737	Fe	—	80	—	—	2719.90	Kr	—	—	[5 whl]	Me	2717.30	Gd	—	5	—	Ex
2722.709	Re I	50	—	—	—	2719.893	Mn	—	10	—	—	2717.275	Ce	10	—	—	—
2722.683	Cb	1	10	—	—	2719.862	Al II	—	—	[2]	Sy	2717.20	Fe	2 h	1 h	—	—
2722.683	W	8	—	—	—	2719.857	W	12	10	—	—	2717.183	Ta	100	—	—	—
2722.651	Ru I	60	1	—	—	2719.854	Ir	2	—	—	—	2717.167	W	4	15	—	—
2722.610	Zr II	50	50	—	—	2719.80	Pb II	—	—	[20]	Sx	2717.157	Mo	20	—	—	—
2722.594	Ce	2	—	—	—	2719.77	I	—	—	[20]	Bl	2717.053	Cr	—	2	—	—
2722.559	Mo	2 h	10	—	—	2719.723	Mn	2	15	—	—	2717.007	Ru	30	—	—	—
2722.558	V I	100	40	—	—	2719.718	Ru	12	50	—	—	2717.0	Rn	—	—	[3]	Pe
2722.461	W	12	5	—	—	2719.685	Mo	—	5	—	—	2716.982	U	6	2	—	—
2722.391	Ru	20	—	—	—	2719.653	Ga	5	15	—	—	2716.97	Eu	300	300	—	—
2722.383	Th	10	8	—	—	2719.582	Co	25	—	—	—	2716.897	W	8	12	—	—
2722.374	Ce	6	—	—	—	2719.556	Zr I	3	—	—	—	2716.819	Rh I	50	3	—	—
2722.321	La I	5	—	—	—	2719.537	Re	20	—	—	—	2716.787	Mn	1	40	—	—
2722.319	Ta	5	—	—	—	2719.515	Ru I	100	30	—	—	2716.761	Re	25	—	—	—
2722.306	Cb	3	1	—	—	2719.48	Se	—	—	[35]	Bl	2716.72	Sb II	—	—	[8]	Lg
2722.243	V	2	10	—	—	2719.465	Th	5	3	—	—	2716.624	Cb	10	200	—	—
2722.205	Re	30	—	—	—	2719.423	Fe	20	12	—	—	2716.584	Ru	—	80	—	—
2722.20	Yb	—	4	—	—	2719.418	Ti II	7	15	—	—	2716.54	Rb	—	—	[2]	Ok
2722.114	Co I	50 w	—	—	—	2719.345	Ce	1	2	—	—	2716.534	Ir	6	—	—	—
2722.081	Mn	1	50 h	—	—	2719.327	W	15	20	Ws	—	2716.387	U	3	4	—	—
2722.040	Fe II	20	70	—	—	2719.301	Fe II	—	4	—	—	2716.34	Cd	—	—	[5]	Es
2721.990	Ce	3	—	—	—	2719.300	Mn	—	20 h	—	—	2716.318	Th	10	10	—	—
2721.983	Cb	10	200	—	—	2719.237	Ce	6	—	—	—	2716.315	W II	8	20	—	—
2721.862	Os	75	10	—	—	2719.177	Mo	—	5	—	—	2716.308	Cb	3	30	—	—
2721.848	W II	—	10	—	—	2719.117	Ce	2	—	—	—	2716.291	Ce	3	—	—	—
2721.839	Pt	1	10	—	—	2719.10	Ti I	5	—	—	Fl	2716.258	Fe	5	—	—	—
2721.826	Ta	50	—	—	—	2719.09	Lu	10 h	—	—	Me	2716.254	Ti II	5	70	—	—
2721.819	Fe II	—	30	—	—	2719.038	Pt I	1000 w	100 W	—	—	2716.25	Si	—	—	[5]	Sy
2721.768	Ag	20	25	—	—	2719.03	Br	—	—	[5]	Bl	2716.218	Fe II	20	150	—	—
2721.697	Th	10	12	—	—	2719.025	Fe I	500 r	300 r	—	—	2716.218	Ag	—	8	—	—
2721.685	Ce	10	—	—	—	2719.02	Yb	—	2	—	—	2716.181	Cr I	20	4	—	—
2721.675	Cu II	—	150	IBu	—	2719.003	Mn	—	20	—	—	2716.16	Kr II	—	—	[10 h]	Me
2721.665	W	9 s	15	—	—	2719.0	Cs	—	—	[2]	Bs	2716.146	Ce	2	—	—	—
2721.645	Ca I	20	2	IWg	—	2718.96	Al	—	—	[8]	Sy	2716.124	Ru	—	100	—	—
2721.627	Cb	4	8	—	—	2718.901	W	25	20	—	—	2716.095	Cb	5	1	—	—
2721.6	Cs	—	[2]	Bs	—	2718.90	O II	—	—	[7]	Mh	2716.00	Cd	—	—	[5]	Es
2721.592	Er	5	1	—	—	2718.900	U	5	6	—	—	2715.987	Co I	75 w	75	—	—
2721.562	Ru I	60	5	—	—	2718.893	Sb	50	50	—	—	2715.94	Yb	—	2	—	—
2721.459	U	5	4	—	—	2718.828	Ru	30	5 h	—	—	2715.91	Lu	—	4 h	—	Me
2721.39	Tb	—	20	Ex	—	2718.775	Cu II	40	300 w	—	IBu	2715.879	Cb	2	100	—	—
2721.367	Th	—	5	—	—	2718.644	Mo	15	—	—	—	2715.80	Zr	—	2 h	—	—

2715.8—2708.1 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2715.80	P	-	-	[5 h]	Gu	2713.295	Ce	2	-	-	-	2710.60	Ca	-	-	4	Ad
2715.8	Ca	-	-	[2]	Bs	2713.194	Ru	60	2	-	-	2710.547	Fe I	80	35	-	-
2715.776	Ru	50	-	-	-	2713.165	Re	25	-	-	-	2710.54	Yb	2	10 d	-	-
2715.771	Re	30	-	-	-	2713.127	Pt	200	10	-	-	2710.5	Cs	-	-	[2]	Bs
2715.770	Pt	5	-	-	-	2713.093	Mo	5	-	-	-	2710.45	Hg	-	-	[12]	Dj
2715.76	Xe II	-	-	[2]	Hu	2713.070	Ru	-	80	-	-	2710.40	P	-	-	[10]	Gu
2715.746	Ce	5	-	-	-	2713.046	V	40	80	-	-	2710.38	Cl	-	-	[10]	Jv
2715.72	In	-	-	2	-	2713.033	Re	25	-	-	-	2710.333	Mn	12	40 h	-	-
2715.687	Cb	4	-	1	-	2712.976	Ce	2	-	-	-	2710.32	W	-	-	7	-
2715.686	V	50	300 R	-	-	2712.941	Mo	-	5	-	-	2710.27	Kr II	-	-	[3]	Me
2715.636	Os	8	2	-	-	2712.879	Ru	30	-	-	-	2710.265	In I	800 R	200 Rh	-	-
2715.692	Mo	4	6 Wh	-	-	2712.814	V	9 h	4 wh	-	-	2710.234	Re	15 w	-	-	-
2715.639	U	8	8	-	-	2712.740	Ir I	40	10	-	-	2710.232	Ru	50	100	-	-
2715.62	Cu	20 w	-	-	-	2712.695	W	1	20	-	-	2710.23	Cr	50 h	-	-	-
2715.503	Ru	12	2 h	-	-	2712.689	Mo	3	-	-	-	2710.194	Mo	10	20	-	-
2715.495	W	20	8	-	-	2712.662	Er	4	2	-	-	2710.162	V	6	60	-	-
2715.470	Re I	100	-	-	-	2712.65	Yb	2	5	-	-	2710.127	Ta	200	3	-	-
2715.45	O II	-	-	[15]	Mh	2712.585	W	5	-	-	-	2710.083	Ir I	10	5	-	-
2715.426	Ce	5	-	-	-	2712.582	U	-	2	-	-	2710.04	Nd	5	2	-	-
2715.416	La II	1	10 hl	-	-	2712.57	Cd I	75	20	-	-	2710.000	W	8	4	-	-
2715.364	Os	12	5	-	-	2712.488	Zn I	300	8	IHz	-	2709.997	Hf II	-	4	-	-
2715.344	Cb	2	100	-	-	2712.483	Re	30	-	-	-	2709.993	Fe	40	10	-	-
2715.338	W II	8	20	-	-	2712.425	Hf II	25	50	-	-	2709.990	Eu	20	-	-	-
2715.323	Fe I	12	5	-	-	2712.420	Zr II	20	15	-	-	2709.956	Mn	-	25	-	-
2715.314	Ce	3	-	-	-	2712.410	Ru	80	300	-	-	2709.92	La II	1 h	3	Me	-
2715.308	Rh	50	500 wh	-	-	2712.40	Kr II	-	[80 h]	Me	-	2709.864	Os	20	5	-	-
2715.243	Ce	6	-	-	-	2712.388	Fe II	2	100	-	-	2709.82	Pd II	-	[5]	Bx	-
2715.241	Ru	20	5 h	-	-	2712.372	Ce	2	-	-	-	2709.82	N II	-	[50]	Fl	-
2715.170	Mo	20	1	-	-	2712.348	Mo	1	40	-	-	2709.784	Zr	3	-	-	-
2715.170	Ce	10	-	-	-	2712.307	Cr II	30	70	-	-	2709.757	Mo	-	6	-	-
2715.125	Fe	5	2	-	-	2712.235	I	-	[100]	Ke	-	2709.752	W	8	-	-	-
2715.092	Th	6	5	-	-	2712.223	V I	6	10 hl	-	-	2709.73	Eu	8 w	-	-	-
2715.08	Ca	-	3	Ad	-	2712.137	Hf II	10	10	-	-	2709.71	Yb	-	2	-	-
2715.045	Rh I	50	2	-	-	2712.120	Er	7	1	-	-	2709.67	Br	-	[35]	Bl	-
2715.031	V	10	2	-	-	2712.116	U	3	2	-	-	2709.626	Ge	30	20	-	-
2714.998	U	6	4	-	-	2712.1	bh C	12	-	L	-	2709.610	Mn	-	12	-	-
2714.975	Ce	5	-	-	-	2712.1	Rn	-	[7]	Pe	-	2709.598	Cb	1	5	-	-
2714.935	W	-	3	-	-	2712.089	Ru	30	-	-	-	2709.582	Al II	-	[6]	Sy	-
2714.902	Pd II	-	200	-	-	2712.061	U	8	6	-	-	2709.575	W II	6	15	-	-
2714.868	Fe I	40	15	-	-	2712.06	Ag II	3	200 h	-	-	2709.527	Mo	15	-	-	-
2714.815	W	4	3	-	-	2711.993	Hf II	10	10	-	-	2709.523	Rh I	50	2	-	-
2714.734	Mn	-	5	-	-	2711.935	Ce	2	-	-	-	2709.508	U	8	8	-	-
2714.723	Ce	5	-	-	-	2711.917	Mo	10	-	-	-	2709.406	Ce	8	-	-	-
2714.674	Ta	200	8	-	-	2711.88	Cu II	-	3	Sh	-	2709.374	Fe II	-	4	-	-
2714.642	Os	50 r	10	-	-	2711.845	Fe II	4	100	-	-	2709.334	Zr I	12	-	-	-
2714.617	Th	2 h	4	-	-	2711.82	Rb	-	[10]	Ok	-	2709.31	Cr	2	60	-	-
2714.584	U	10	8	-	-	2711.76	U	5 d	4 d	-	-	2709.274	Ta	40	150	-	-
2714.550	Ir I	4	-	-	-	2711.736	V	50	150 R	-	-	2709.246	Mo	20	1	-	-
2714.538	La I	6	-	-	-	2711.66	I	-	[20]	Bl	-	2709.23	Tl I	400 R	200 R	Fl	-
2714.49	Kr II	-	[3 h]	Me	-	2711.654	Fe I	100	50	I	-	2709.206	Pd II	-	30 wh	-	-
2714.418	Co II	12	200 W	-	-	2711.65	Xe	-	[2]	Hu	-	2709.204	Ru	60	8	-	-
2714.412	Fe II	200	400	-	-	2711.61	Te	-	[50]	Bl	-	2709.2	In	-	5	Cx	-
2714.410	Rh I	150	5	-	-	2711.6	Cs	-	[2]	Bs	-	2709.07	Zr	-	3	-	-
2714.4	Rn	-	[3]	Pe	-	2711.584	Mn	2	125 h	-	-	2709.07	Br	-	2	Py	-
2714.40	Yb	-	4	-	-	2711.572	Ir	-	6 h	-	-	2709.056	Fe II	3	100	-	-
2714.38	Cl II	-	[8]	Ks	-	2711.55	U	4 w	6 w	-	-	2709.054	Co II	-	30 wh	-	-
2714.333	W	-	3	-	-	2711.52	Tm	8	-	Me	-	2709.03	Cl II	-	[10]	Ks	-
2714.319	Pd	-	150	-	-	2711.508	Zr II	40	20	-	-	2709.03	U	3 w	4 w	-	-
2714.291	U	2	2 h	-	-	2711.486	Mo	1	25	-	-	2709.0	Cs	-	[2]	Bs	-
2714.258	Zr II	7	7	-	-	2711.463	Fe	12	3	-	-	2709.00	B II	-	[2]	En	-
2714.199	V	60	100	-	-	2711.456	Th	6	4	-	-	2708.96	Ra II	-	[200]	Rs	-
2714.198	Cb	3	5	-	-	2711.432	Ce	4	-	-	-	2708.953	Ce	8	-	-	-
2714.103	Ir	-	10 h	-	-	2711.368	Cb	1	5	-	-	2708.921	W	10	9	-	-
2714.062	Fe	20	3	-	-	2711.343	Sc I	10	-	-	-	2708.843	Ru	20	-	-	-
2714.0	Cs	-	[2]	Bs	-	2711.31	W	-	4	-	-	2708.84	Yb	1	3	-	-
2713.935	In I	200 R	125 wh	-	-	2711.28	P	-	[5]	Gu	-	2708.817	Co	30	2	-	-
2713.92	Rb	-	[10]	Ok	-	2711.244	Ce	4	-	-	-	2708.807	Mn	-	12	-	-
2713.914	U	6	6	-	-	2711.21	Ag II	1 h	300 wh	-	-	2708.794	W	9	2	-	-
2713.847	W	7	2	-	-	2711.11	Kr II	-	[2]	Me	-	2708.791	Ni II	-	500	-	-
2713.843	Mn	-	15	-	-	2711.105	U	8	4	-	-	2708.79	Cr	3	40	-	-
2713.839	Hf	10	1	-	-	2711.09	Dy	2	-	Ed	-	2708.680	Ce	2	-	-	-
2713.8	bh B	200	-	L	-	2711.011	Ce	5	-	-	-	2708.675	Ir	-	10 h	-	-
2713.763	Ti II	-	2	-	-	2710.927	Mo	1	25	-	-	2708.66	Br	-	[3]	Bl	-
2713.74	Br	-	[25]	Bl	-	2710.922	Pt II	1	15	-	-	2708.646	Ru	20	-	-	-
2713.737	Ru	60	2 h	-	-	2710.92	Cr	1	70	-	-	2708.584	W	10	15	-	-
2713.734	Cb	-	5	-	-	2710.782	W II	6 d	15	-	-	2708.570	Fe	80	50	-	-
2713.670	Re	15	-	-	-	2710.742	Mo	20	1	-	-	2708.451	Mn	15	50 h	-	-
2713.583	Ru	-	100	-	-	2710.738	Ru	20	-	-	-	2708.435	Ce	4	-	-	-
2713.51	Hf II	2	5	Me	-	2710.723	Ta	1	10 h	-	-	2708.348	Ta	8	-	-	-
2713.506	Mo	20	40	-	-	2710.7	Rn	-	[3]	Wo	-	2708.28	A	-	[40]	Rt	-
2713.505	Cu II	50	300 w	IBu	-	2710.685	La	3	-	-	-	2708.23	Eu	-	5	-	-
2713.49	U	-	15 wh	-	-	2710.67	Tl I	30 R	10	Fl	-	2708.181	W	10	6 s	-	-
2713.331	Mn	300 Wh	-	-	-	2710.66	Hf	-	3	-	-	2708.181	Th	10	20	-	-
2713.32	Rh	-	25	-	-	2710.625	Mn	-	25 h	-	-	2708.179	Os	10	15	-	-
2713.3	Br II	-	10 h	Cf	-	2710.602	U	-	6	-	-	2708.173	Ce	6	-	-	-

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2708.156	I	30	Ke	2705.38	I	8	Ke	2702.629	Ru	10	-
2708.144	Ta	-	-	2705.36	Hg II	30	Ps	2702.612	Mo	8	-
2708.131	Ce	8	-	2705.360	Ir	2	-	2702.61	Cu I	8 d	-
2707.971	Ru	50	3	2705.329	Ru	12	-	2702.554	Ne I	-	Ps
2707.95	U	-	2 d	2705.326	Cb	1	5	2702.55	Fe	7	3
2707.94	Fe	2	-	2705.3	Cs	-	[2]	2702.539	Ce	2	-
2707.93	Cd II	-	-	2705.263	Eu	50 l	-	2702.533	Cr	10	2
2707.9	Rn	-	[12]	2705.245	U	3	4	2702.520	W	10	3
2707.878	W	10	4	2705.242	Mo	20	1	2702.519	Cb	8	80
2707.863	V	70	150	2705.23	Fe	1 h	-	2702.48	Hg	-	[15] Ps
2707.860	Re	8	-	2705.224	V	25	50	2702.455	Nd	10	2
2707.833	Cb	3	80	2705.2	In	-	2	2702.453	Fe	15	10
2707.829	Ta	10	-	2705.186	U	8	6	2702.45	Co	-	3
2707.714	U	3	4 h	2705.119	Ir I	3	8 h	2702.416	Ru	12	-
2707.639	Ta	2 h	-	2705.04	Br	-	[2]	2702.401	Os	2	-
2707.589	V I	4	-	2704.96	Rh	3	40	2702.399	Pt I	1000	300
2707.530	Mn	10	50 h	2704.934	Mo	1	50	2702.233	Rh I	5	2
2707.520	Ta	2	-	2704.931	Ir I	12	2	2702.196	Cb	10	100
2707.502	Co II	-	100 wh	2704.899	Cb	-	5	2702.189	V	80	300 R
2707.473	Ru	30	-	2704.87	Ca	-	6	2702.159	La II	2	8
2707.470	Ce	2	-	2704.814	Ru	-	25	2702.119	Ce	3 w	-
2707.451	Fe	20	6	2704.78	W	-	5 h	2702.114	Co II	-	25 wh
2707.444	Al II	-	[2]	2704.747	Cr	15 r	2	2702.111	W	8	25
2707.421	Os	12	4	2704.694	Cb	2	10	2701.989	Cr I	35	8
2707.411	Re	25	-	2704.64	I	-	[12]	2701.924	Ce	2 w	-
2707.39	Xe	-	[3]	2704.623	Ir I	3	-	2701.911	Fe	20	5
2707.294	Ru	-	60	2704.60	Li	-	2	2701.90	I	-	[12] Bi
2707.226	Rh I	100	4	2704.582	Fe II	5	10	2701.894	Eu	300 W	200
2707.211	Cb	1	5	2704.566	Ru	-	100	2701.873	Mo	2	30
2707.175	Ir I	2	-	2704.54	Nd	10 d	2	2701.86	Th	2 h	5
2707.14	Cd II	-	[30]	2704.50	Yb	-	2	2701.819	U	6	2
2707.132	Fe II	-	70	2704.483	In II	-	[30]	2701.817	W	8	-
2707.07	La I	3	-	2704.448	Os	10	1	2701.810	Zr I	2	-
2707.05	Fe	4	-	2704.427	Cb	2	10 h	2701.8	Bi II	-	6 Cf
2707.045	Ti II	2	15	2704.379	Er	3	-	2701.71	Lu	40	150 Me
2707.024	Ce	2	-	2704.373	Re	25	-	2701.703	Ce	3	-
2707.020	W	6	15	2704.312	Ta	50	-	2701.700	Mn	150	40 h
2707.006	Mo	-	6	2704.26	Br	-	[3]	2701.656	Cr	-	5
2706.96	Se	-	[5]	2704.257	Cb	2 w	50	2701.610	Ta	8	-
2706.95	U	15 d	20 d	2704.191	Ru	10	35	2701.549	U	8	10
2706.921	Ta	15	-	2704.1	Cs	-	[2]	2701.535	V	10	6
2706.884	Ce	15	-	2704.07	Tb	10	-	2701.53	Si	-	[5] Sy
2706.882	Ir I	2	-	2704.034	Ir I	15	-	2701.52	Ti	-	4 h
2706.79	Cs	-	[20]	2703.990	Mn	100 wh	25	2701.477	W II	2	18
2706.76	Sc I	7	-	2703.989	Fe II	30	400	2701.417	Mo	20	100
2706.739	Co II	-	100 wh	2703.962	Th	15	15	2701.36	Cl	-	[4] Jv
2706.727	Hf II	10	50	2703.944	Ce	10	-	2701.34	Kr II	-	[15 h] Me
2706.702	Os	50	8	2703.856	Cr II	8	30	2701.338	Ru	60	8
2706.698	V	60	200 R	2703.844	Mo	-	3	2701.269	V	10	-
2706.696	W II	6	20	2703.801	Ru	60	3	2701.250	Cr	-	5
2706.688	Ta	50	1	2703.732	Rh I	150	25	2701.18	Cs	-	[20] Bs
2706.634	Mn	-	12	2703.610	Mo	1	15	2701.169	Mn	8	10 h
2706.581	Fe I	150	150	2703.554	Cr	-	50	2701.160	Fe	-	2 Do
2706.580	W	12	10	2703.54	Te	-	[25]	2701.125	Eu II	60 h	60 h
2706.510	Sn	200 R	150 R	2703.528	Ta	8	-	2701.115	Ir	4	1
2706.49	La II	5	2	2703.495	Ce	4	-	2701.09	Cr	1	8
2706.489	Re	10	-	2703.480	Cr I	15	-	2701.06	W	2	12
2706.395	Cb	2	15	2703.456	W	2	20	2701.030	Mo	15	1
2706.367	Zr II	1	2	2703.453	Mn	-	12	2701.005	Mn	5	12 h
2706.336	Ce	2	-	2703.44	Xe II	-	[8]	2700.990	Ru	-	50
2706.28	Tb	10	10	2703.397	Pd II	-	5 h	2700.963	Cu II	20	400 IBu
2706.174	Zr I	12	-	2703.36	Au	-	8	2700.96	U	10 d	4
2706.169	V	100	400 R	2703.36	Ti II	-	[10]	2700.936	V	125	500 R
2706.147	Ta	3	-	2703.316	Ru	12	-	2700.92	Hg I	-	[2] Dj
2706.141	Ce	3	-	2703.250	Re	5	-	2700.89	Au I	20	25
2706.119	Mo	20	20 Wh	2703.184	Cu II	10	200	2700.876	Cb	2	20
2706.08	Rb	-	[2]	2703.164	Hf II	1	5	2700.80	Yb	-	8
2706.072	Fe	8	3	2703.148	V	1	2	2700.746	Mo	15	-
2706.056	Re	25	-	2703.138	Ce	6	-	2700.746	Os	10	1
2706.015	Fe	60	40	2703.13	Lu	7 h	-	2700.702	Ta	10	-
2706.006	W	10	8	2703.12	W II	4	5	2700.672	Ru	30	1 h
2705.93	W	-	6	2703.062	W II	3 d	15	2700.60	Kr	-	[3 h] Me
2705.894	Pt I	1000 wh	200 wh	2703.057	Ta	60	-	2700.598	Ta	3	-
2705.872	Yt I	3	-	2702.999	Mn	-	10 h	2700.597	Cr I	30	2
2705.848	Co I	15 w	100 w	2702.979	Mo	5 h	-	2700.59	Rh	2	80
2705.735	Mn	25	25 h	2702.879	Ce	4 w	-	2700.555	Ne I	-	[8] Ps
2705.726	Cr	12	-	2702.832	Ru I	80	8	2700.555	Cb	5 d	10
2705.629	Rh	100	300 wh	2702.830	Os	8	2	2700.511	V I	2	-
2705.611	Hf	5	1	2702.80	Ta	40 d	30 wh	2700.481	Ru I	50	-
2705.572	W II	1	12	2702.78	Br	-	[10]	2700.471	Ce	3	-
2705.561	Mn II	4	20	2702.772	Mo	8	-	2700.47	Ga II	-	[70] Sy
2705.55	Ti II	-	[20]	2702.7	Cd	-	[5]	2700.430	Mo	-	3 Wh
2705.537	Ir I	10	2	2702.665	Re	25	-	2700.314	Cb	1	5
2705.430	Cr	12	2	2702.66	Se	-	[10]	2700.312	W	-	15
2705.39	Se	-	[5]	2702.639	Ba I	50	5 h	2700.30	Cs	-	[8] Bs

2700.2—2692.2 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2700.288	Ta	5 wh	-	-	2697.462	Fe II	3	50	-	2694.705	Mo	-	3	-
2700.231	Ca	5	-	-	2697.398	U	10	6	-	2694.694	Cr	-	2	-
2700.213	Mo	20	1	-	2697.33	Be II	-	[2]	Ps	2694.680	Co II	25	200 w	-
2700.2	Tl I	10 l	-	Fl	2697.308	Fe II	2	15	-	2694.65	V	-	10 h	Me
2700.17	Te	-	[5]	Bl	2697.29	Hg I	-	[5]	Dj	2694.594	W	-	18	-
2700.154	Ru	-	100	-	2697.27	W	-	7	-	2694.55	Te	-	[15]	Bl
2700.153	Cb	3	10	-	2697.266	Re I	50	-	-	2694.538	Fe	100	35	-
2700.131	Zr II	50	50	-	2697.262	Mo	4	10	-	2694.533	Ir I	2 h	-	-
2700.051	V	6	2 h	-	2697.241	Os	8	1	-	2694.523	Os	10	3	-
2700.009	W	15	10	-	2697.210	V	-	12	-	2694.468	V	1	20	-
2699.988	Mo	-	15	-	2697.20	Si	-	[2]	Sy	2694.399	Re	-	-	-
2699.883	Ru I	30	3	-	2697.067	Ru	4	30	-	2694.398	Co I	25	-	-
2699.84	Br	-	[3]	Bl	2697.063	Cb	10	500	-	2694.380	W II	9	18	-
2699.77	Fe	7	4	-	2697.041	Co II	-	60	-	2694.37	Au	-	3	-
2699.75	Rh	-	25	-	2697.031	Ce	5	-	-	2694.315	Cb	1 h	5	-
2699.74	Lu	-	3	Me	2697.021	Fe I	50	25	-	2694.308	Rh I	5	4	-
2699.676	U	3	2	-	2696.993	V I	70	2	-	2694.239	Pt	2	-	-
2699.63	Ca	-	2	Ad	2696.977	U	2	2	-	2694.233	Ir I	150 h	50	-
2699.63	Hf	10	10	-	2696.895	W	-	18	-	2694.23	Br	U	[5]	Bl
2699.605	Zr II	10	10	-	2696.84	B	-	2	Sy	2694.222	U	10	4	-
2699.590	W	15	10	-	2696.836	Th	2 h	4	-	2694.207	La II	1 h	5	-
2699.589	Os	50	8	-	2696.833	Mo	1	40	-	2694.205	Yt	8	-	-
2699.583	Re	25	-	-	2696.824	Ce	5	-	-	2694.105	V	4	1	-
2699.528	Ce	2	-	-	2696.814	Ta	125	1	-	2694.093	Mn	8	50	-
2699.50	Hg I	25	[5]	Dj	2696.767	V I	10	-	-	2694.066	I II	-	[30]	Ke
2699.407	Mo	3	30	-	2696.763	Bi I	25 R	15 R	-	2694.060	Zr II	15	15	-
2699.389	Pt II	-	6	-	2696.750	Cr	-	20	-	2693.920	V I	10	2 h	-
2699.372	U	8	6 h	-	2696.62	Yb	-	4	-	2693.91	Rb	-	[2]	Ok
2699.349	Cr	-	8	-	2696.614	Bi	100	100	-	2693.882	Pd II	-	15 wh	-
2699.259	W	-	8	-	2696.550	Ru	30	-	-	2693.882	In II	-	[30]	Ps
2699.253	Ru	4	4	-	2696.544	V	-	20	-	2693.857	Fe II	-	30	-
2699.185	Fe	-	5	Do	2696.543	Cr I	30	1	-	2693.77	U	6 d	4 d	-
2699.16	Xe	-	[2 h]	Hu	2696.491	Ni I	2	50	-	2693.724	Re	10	-	-
2699.16	Cs	-	[8]	Bs	2696.489	Ru	-	5	-	2693.71	Mg I	10	-	-
2699.152	Ce	3	-	-	2696.41	Pd II	-	10 wh	-	2693.663	Ru	6	-	-
2699.109	V I	40	-	-	2696.37	W	4	-	-	2693.574	Mn	-	15	-
2699.107	Fe I	100	60	S	2696.284	Fe	90	50	-	2693.532	Mo	8	-	-
2699.104	Sc	3	25	-	2696.219	V	10	2	-	2693.526	Zr II	15	15	-
2699.033	W	-	8	-	2696.180	Hf	10	-	-	2693.52	Cr	1	40	-
2698.968	Mn	-	40	-	2696.119	He I	-	[7]	Ps	2693.500	Ta	10 h	-	-
2698.862	Cb	5	200	-	2696.11	O	-	[7]	Mh	2693.490	Ir I	10	-	-
2698.851	Hg I	25	30	-	2696.072	Mo	25	1	-	2693.476	V I	-	4	-
2698.850	Cr	-	35	-	2696.072	Ce	20	-	-	2693.450	Ru	8	15	-
2698.837	W	12	4	-	2696.050	Cb	5	2	-	2693.447	Ce	6	-	-
2698.801	Re	20	-	-	2695.996	Fe	80	50	-	2693.35	U	5 d	2 d	-
2698.752	Ru	-	3 h	-	2695.961	Ce	10	-	-	2693.342	Ta	30	-	-
2698.742	Th	6	5	-	2695.958	Mn	-	20	-	2693.287	Ru	80	2 h	-
2698.731	Ce	3	-	-	2695.930	Ir I	8	2	-	2693.194	Mn	8	20 W	-
2698.730	V I	70	15 h	-	2695.908	U	5	6	-	2693.177	Mo	1	25	-
2698.686	Cr II	12	35	-	2695.87	W	-	8	-	2693.12	Co	-	25	Ex
2698.607	Ir	5	1	-	2695.849	Co I	50 w	-	-	2693.041	Mo	15	-	-
2698.547	Pd II	-	200	-	2695.822	Th	4	3	-	2693.027	Co	3	-	-
2698.54	Cl	-	[3]	An	2695.78	Rh	1	15	-	2693.01	Ce	-	25	Ex
2698.516	Ti	-	200 h	-	2695.70	Kr II	-	[30 h]	Me	2693.007	V I	4 h	4 h	-
2698.452	U	6	6	-	2695.666	W	20	12	-	2693.0	Bi II	-	15	Cf
2698.428	Pt I	500	50	-	2695.662	Fe	20	12	-	2692.943	Mo	-	15	-
2698.409	Cr II	12	35	-	2695.597	Cb	-	5	-	2692.917	Zr I	6	-	-
2698.392	Er	-	5	-	2695.562	Re	30	-	-	2692.876	Ir I	10	-	-
2698.378	V	30	300	-	2695.555	Th	8	10	-	2692.85	Dy	4	-	-
2698.359	Ce	3	-	-	2695.55	Te	-	[50]	Bl	2692.844	Ru	30	-	-
2698.347	W	-	8	-	2695.542	Ta	3 s	2	-	2692.836	Fe II	15	20	-
2698.321	I II	-	[50]	Ke	2695.538	Ce	5	-	-	2692.832	Gd	1 h	2 h	-
2698.31	Zr	-	3 h	-	2695.534	Fe	40	30	-	2692.832	Er	3	2 h	-
2698.302	Ta	150	3	-	2695.490	U	12	30	-	2692.701	Os	8	2	-
2698.3	bh C	20	-	L	2695.468	Ir I	5	5	-	2692.68	Yb	-	2	-
2698.165	Fe	35	6	-	2695.458	La II	3	35	-	2692.657	Mn	150	-	-
2698.14	Mg I	12	-	-	2695.43	Yb	1	6	-	2692.655	Fe I	20	-	-
2698.057	U	20	50	-	2695.427	Zr II	5	5	-	2692.653	Cb	-	4 h	-
2698.054	Ru	12	6	-	2695.382	Yt I	7	2	-	2692.62	A II	-	[20]	Rt
2698.033	Ce	6	-	-	2695.360	Mn	100 R	50	-	2692.613	Mo	2	40	-
2697.907	Cr	3	35	-	2695.237	V I	7	7	-	2692.600	Zr II	6	5	-
2697.806	Mo	25	4	-	2695.217	Mo	5	40	-	2692.597	Fe II	-	300	-
2697.745	V I	100	50 R	-	2695.215	Ce	8	-	-	2692.447	Mn	-	15	-
2697.734	Fe	1	3	-	2695.214	Mg I	10	-	-	2692.422	Th	20	20	-
2697.714	W II	15	25	-	2695.207	Th	6	8	-	2692.407	Ce	12	-	-
2697.710	U	-	4 h	-	2695.2	Si	-	[5]	Sy	2692.40	Yb	-	2	-
2697.67	Te	-	[15]	Bl	2695.18	B	-	6	Sy	2692.395	Ta	100	8	-
2697.550	Th	5	5	-	2695.048	Mn	-	15	-	2692.365	U	8	-	-
2697.535	Ce	2	-	-	2695.040	Cb	10	3	-	2692.36	Rh I	2	-	-
2697.527	Pb	15 wh	5 h	Kl	2695.039	Fe	30	20	-	2692.344	Ir I	15	2	-
2697.512	W	15	3	-	2694.982	W II	2	12	-	2692.34	Lu	5 h	-	Me
2697.512	Ru	30	-	-	2694.759	Ta	50	-	-	2692.308	Rh I	6	3	-
2697.506	Mo	-	4	-	2694.755	Cb	1	5	-	2692.254	Fe I	20	4	-
2697.50	Cr	1	35	-	2694.748	Os	5	1	-	2692.253	Sb	40	40	-
2697.50	Tm	15	15	Me	2694.741	V	2	70	-	2692.236	Pt II	4	40	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2692.190	Ir I	5	-	-	-	2689.341	W	-	5	-	-	2686.48	Te	-	-	[5]	Bl
2692.182	Mo	3	-	-	-	2689.329	Re	25	-	-	-	2686.394	Fe II	-	-	10	-
2692.12	Cr	1	12	-	-	2689.299	Cu II	-	300	IBu	-	2686.391	Cb	2	300	-	-
2692.065	Ru	8	200	-	-	2689.24	Ta	20 h	20 h	-	-	2686.357	V I	15	-	-	-
2692.02	Se	-	[10]	Bl	-	2689.212	Fe I	150	150	S	-	2686.355	W	-	-	8 ws	-
2692.02	Yb	-	4	-	-	2689.19	Cr	-	10	-	-	2686.333	Ce	2	-	-	-
2692.019	Eu	200	200	-	-	2689.176	Ce	2	-	-	-	2686.3	Rn	-	-	[3]	Pe
2692.013	Ce	2	-	-	-	2689.114	V I	6	-	Me	-	2686.294	Ru I	80	12	-	-
2692.01	Zr II	1	2 h	-	-	2689.072	Cb	2	5 h	-	-	2686.29	Ta	15 d	-	-	-
2692.000	Cb	1	8	-	-	2689.06	Te	-	[10]	Bl	-	2686.284	Pd I	3	1	-	-
2691.974	Mn	-	20	-	-	2688.989	I	-	[100]	Ke	-	2686.26	Zr	1	2	-	-
2691.904	Ir	2	-	-	-	2688.941	V I	9	-	-	-	2686.18	I	-	-	[12]	Bl
2691.90	Te	-	[15]	Bl	-	2688.900	Ru	30	-	-	-	2686.16	Th	-	-	40 d	-
2691.83	Cs	5	[2]	Bs	-	2688.822	Ti	40	5	-	-	2686.14	Xe II	-	-	[2 h]	Hu
2691.812	Mo	-	2	-	-	2688.728	Al II	-	[25]	Sy	-	2686.100	Fe II	-	-	7	-
2691.795	U	6	6	-	-	2688.715	V I	35	100 R	-	-	2686.00	Yb	-	-	3	-
2691.773	Cb	10	100	-	-	2688.71	Au I	2	20	-	-	2685.979	U	10	12	-	-
2691.732	Fe II	-	35	-	-	2688.643	Mo	20	-	-	-	2685.940	Mn	12 h	100 w	-	-
2691.702	Mo	-	5	-	-	2688.587	Ru	30	1	-	-	2685.916	Zr	3	-	-	-
2691.687	Ce	6	-	-	-	2688.551	Pd II	-	200	-	-	2685.889	Ru	-	-	6	-
2691.559	W	8	1	-	-	2688.527	Re	100	-	-	-	2685.840	V I	10	-	-	-
2691.49	Fe	5	1	-	-	2688.403	Er	3	-	-	-	2685.790	Mo	-	25	-	-
2691.344	Ge	25	15	-	-	2688.37	Kr	-	[4 h]	Me	-	2685.774	Ce	2	-	-	-
2691.310	Ta	150	-	-	-	2688.35	Ag II	-	10 wh	-	-	2685.76	Fe	4	-	-	-
2691.29	Ga I	-	[25]	Sy	-	2688.35	Hf	3	-	Me	-	2685.713	W	7	-	-	-
2691.280	W	10	3	-	-	2688.329	Th	6	2	-	-	2685.688	V	12	30	-	-
2691.254	In II	-	[10]	Ps	-	2688.32	S	-	[15]	Bl	-	2685.65	Eu II	150	100	-	-
2691.230	Th	8	6	-	-	2688.293	Cr	1	15	-	-	2685.609	U	6	2	-	-
2691.219	Ce	3	-	-	-	2688.29	Se	-	[10]	Bl	-	2685.589	Mo	10	-	-	-
2691.20	Kr II	-	[2]	Me	-	2688.246	Mn	3	100 h	-	-	2685.54	Lu	10 h	1	Me	-
2691.175	Ce	2	-	-	-	2688.223	W II	8 a	20	-	-	2685.52	Hg	-	-	[8]	Dj
2691.13	Hg II	-	[5]	Ps	-	2688.16	Au II	-	10	-	-	2685.516	V I	6	-	-	-
2691.12	Rh	1	60	-	-	2688.160	Ce	2	-	-	-	2685.454	Ta	2	-	-	-
2691.091	W	15	8	-	-	2688.155	Ru	8	-	-	-	2685.428	Ce	2	-	-	-
2691.064	Ir I	15	-	-	-	2688.109	Ru	8	100	-	-	2685.341	Co I	75 w	-	-	-
2691.050	In II	-	[10]	Ps	-	2688.095	Rh I	4	6	-	-	2685.340	W	2	10	-	-
2691.041	Cr II	35	125	-	-	2688.08	Rb	-	[2]	Ok	-	2685.317	Re	15	-	-	-
2691.038	U	15	30	-	-	2688.077	Os	8	2	-	-	2685.25	Br	-	-	[10]	Bl
2690.99	Yb	-	30	Me	-	2688.042	Cr I	30	-	-	-	2685.22	Hf II	10	20	Me	-
2690.979	Ce	3	-	-	-	2688.04	Cl II	-	[150]	Ks	-	2685.182	Cr	-	-	4	-
2690.977	Mn	-	25 w	-	-	2688.02	P I	4	[1]	Ks	-	2685.157	Ru I	10	35	-	-
2690.972	Mo	-	5	-	-	2687.995	W	8	1	-	-	2685.146	W	6	-	-	-
2690.820	Ru	8	-	-	-	2687.993	Mo	30	100	-	-	2685.139	Ti I	15	1	-	-
2690.793	Re	30 h	-	-	-	2687.988	Ce	8	-	-	-	2685.135	V I	18	35	-	-
2690.786	V	70	300 R	-	-	2687.97	Yb	2	4	-	-	2685.11	Ta	15	25	-	-
2690.72	Br	-	[2]	Bl	-	2687.966	U	2	1	-	-	2685.08	Lu	50 h	3	-	-
2690.717	Mo	10	-	-	-	2687.956	V	150	500 R	-	-	2685.08	Od	-	-	[3]	Vs
2690.708	W	-	15	-	-	2687.802	Fe	20	10	-	-	2685.049	W	2	15	-	-
2690.640	Ni II	1	250 h	-	-	2687.78	Ca	-	8	Ad	-	2685.038	Ce	5	-	-	-
2690.576	Ir	-	10 h	-	-	2687.75	Si	-	[5]	Sy	-	2685.021	V I	9	-	-	-
2690.574	W	5	-	-	-	2687.746	Zr I	10	-	-	-	2684.98	P	-	-	[5]	Gu
2690.542	Ta	15	-	-	-	2687.72	La II	2	2	-	-	2684.857	Fe I	8	-	-	-
2690.509	U	10	6	-	-	2687.69	Gd	-	[3]	Vs	-	2684.803	Ti	20	20	-	-
2690.50	Zr	-	4	-	-	2687.658	Pd II	-	150	-	-	2684.768	V	1	10	-	-
2690.50	I	-	[20]	Bl	-	2687.63	Au	-	15	-	-	2684.761	Pd II	-	100	-	-
2690.414	W	6	-	-	-	2687.621	Ce	2	-	-	-	2684.76	Pb II	-	5	-	-
2690.405	Mn	-	10	-	-	2687.524	W	-	8	-	-	2684.76	Yb	3	25	-	-
2690.399	Ru	20	-	-	-	2687.497	Ru	12	100	-	-	2684.751	Fe II	3	400	-	-
2690.260	Re	50 h	-	-	-	2687.412	Mn	25	80 r	-	-	2684.75	Ho	-	10	Ex	-
2690.257	Cr I	30	2	-	-	2687.411	V	9	-	-	-	2684.747	Er	4	3	-	-
2690.245	V	50	200 R	-	-	2687.394	U	5	4	-	-	2684.72	I	-	-	[12]	Bl
2690.193	Ru	-	20	-	-	2687.367	W	15	3	-	-	2684.697	Ce	2	-	-	-
2690.13	Br	-	[20]	Bl	-	2687.317	Rh I	2	-	-	-	2684.622	U	3	2	-	-
2690.071	Fe I	30	30	-	-	2687.22	Hf	-	25	Me	-	2684.597	Ru	10	30	-	-
2689.897	Ru	50	-	-	-	2687.151	Cb	10	5	-	-	2684.55	Co II	-	20 wh	-	-
2689.88	Fe	10	-	-	-	2687.138	Th	10	10	-	-	2684.546	Mn	2	80	-	-
2689.878	Cb	-	4 h	-	-	2687.138	Ru	12	-	-	-	2684.52	Te	-	-	[30]	Bl
2689.876	V	50	150 R	-	-	2687.137	W	7	-	-	-	2684.418	Ce	4	-	-	-
2689.829	Fe I	40	40	-	-	2687.126	Ce	5	-	-	-	2684.412	Ni II	-	600 wh	-	-
2689.82	Co	-	40	-	-	2687.090	Cr II	30	60	-	-	2684.386	W	-	10 l	-	-
2689.816	Os	50	10	-	-	2687.069	Ru	-	50	-	-	2684.38	Ca	-	5	Ad	-
2689.798	Mn	-	40	-	-	2687.03	Xe	-	[3]	Hu	-	2684.294	Th	15	15	-	-
2689.70	Xe	-	[2]	Hu	-	2686.993	W	4 d	20	-	-	2684.293	U	5	4	-	-
2689.679	Ir I	5	1	-	-	2686.887	Ru	-	30	-	-	2684.284	Ce	10	-	-	-
2689.654	W	8	2	-	-	2686.815	U	4	4	-	-	2684.276	Ta	150	2	-	-
2689.62	Rh	1	100	-	-	2686.779	Mn	10	-	-	-	2684.244	Ce	3	-	-	-
2689.516	Ta	8	-	-	-	2686.766	Ce	4	-	-	-	2684.233	Sc II	2 h	-	-	-
2689.50	Fe	4	2	-	-	2686.75	Ne	-	[15]	Ps	-	2684.214	Rh	2	150	-	-
2689.483	Ce	2	-	-	-	2686.748	Fe	50	6	-	-	2684.17	Rb	-	-	[5]	Ok
2689.458	Zr II	10	5	-	-	2686.73	Ca	-	3	Ad	-	2684.161	Zn I	300	6	I Hz	-
2689.423	Fe	5	3	-	-	2686.64	Cs	-	[8]	Bs	-	2684.143	Mo	40	150	-	-
2689.412	Cs II	-	[2]	Ot	-	2686.620	W	8	2	-	-	2684.142	La	5	-	-	-
2689.398	Pt II	1	10	-	-	2686.6	Hg	5 h	[2]	Dj	-	2684.095	Cr	-	2	-	-
2689.350	Os	5	2	-	-	2686.513	V I	15	-	-	-	2684.090	Ru	20	2 h	-	-
2689.347	V I	2	-	-	-	2686.488	Fe	1	4	-	-	2684.08	Tm	10	4	Me	-

2684.0—2676.1 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2684.071	Fe	30	15	-	2681.379	Ag II	-	100 wh	-	2678.675	V I	12	-	-
2684.07	W	9	2 d	-	2681.36	Se	-	[5]	Bl	2678.668	Mo	20	-	-
2684.045	U	15 r	10	-	2681.359	Mo	10	100	-	2678.656	Cb	3	10	-
2684.036	Ir I	15	-	-	2681.34	Ce	-	[8]	Bs	2678.632	Zr II	80	100	-
2684.02	Hf II	1	3	Me	2681.288	Ce	2 w	-	-	2678.618	Ce	2	-	-
2684.0	bh C	10	-	L	2681.235	Mn	-	50	-	2678.568	V	30	150 R	-
2683.963	Ce	2	-	-	2681.18	Ho	-	20	Ex	2678.522	W	10	7	-
2683.949	Fe	15	8	-	2681.172	V I	2	-	-	2678.426	Hf II	10	12	-
2683.84	W	1	10	-	2681.132	U	5 h	2	-	2678.42	U	3	2	-
2683.833	Ir	-	10 h	-	2681.096	Ir I	10	2	-	2678.28	Eu	150	100	-
2683.824	Mn	-	25	-	2681.029	Fe II	-	20	-	2678.178	Ru I	10	-	-
2683.810	Zr I	3	-	-	2681.012	Re	15	-	-	2678.165	Cr I	8	3	-
2683.76	Fe	-	[5]	Bl	2680.965	Th	-	25	-	2678.098	Cb	1	10	-
2683.746	Mn	12	5	-	2680.95	Th	-	20 h	-	2678.086	Na II	6	[40]	Fr
2683.73	Nd	5	-	-	2680.91	Fe I	4	-	-	2678.052	V	3	12 h	-
2683.682	Ru	20	-	-	2680.8	bh C	15	-	L	2678.05	Fe	20	10	-
2683.622	W	-	10	-	2680.793	Fe II	-	12	-	2678.045	Ru	-	6	-
2683.565	Re	50	-	-	2680.67	Pd II	-	[3]	Bx	2678.04	Co	-	3	-
2683.563	Rh	1	200	-	2680.665	Ta	30	40	-	2677.95	Ho	-	20	Ex
2683.55	Kr II	-	[15]	Me	2680.646	U	2	4	-	2677.910	W	8	2	-
2683.441	Cr	-	12	-	2680.631	Rh I	60	10	-	2677.9	air	-	3	-
2683.43	Yb	-	10	-	2680.60	Te	-	[10]	Bl	2677.860	Ta	2	-	-
2683.353	Hf II	15	100	-	2680.564	W	4	10	-	2677.851	Pd II	-	30	-
2683.341	W	12	2	-	2680.543	Ru	5	50	-	2677.846	Mn	-	40	-
2683.280	Al II	-	[15]	Sy	2680.476	V	1	12	-	2677.802	V	70	300 R	-
2683.279	U	25	25	-	2680.454	Fe I	70	35	-	2677.791	W II	8	20	-
2683.231	Mo	20	150	-	2680.443	Na I	40 R	-	Fl	2677.77	Lu	1	10 h	Me
2683.219	Cb	2	5	-	2680.44	Co	-	7	-	2677.764	Re	25	-	-
2683.218	W	4	12	-	2680.425	Ce	4	-	-	2677.76	La I	2 h	-	-
2683.21	Te	-	[5]	Bl	2680.40	Yb	1	3	-	2677.756	U	3	2	-
2683.14	A	-	[2]	Rt	2680.36	P	-	[10 wh]	Gu	2677.660	Cb	2	50	-
2683.14	Er	-	2	-	2680.36	Ca I	15	-	Sd	2677.64	Cd I	100	25	Fl
2683.117	In II	-	[50]	Ps	2680.341	Cr I	10	4	-	2677.592	Ce	5	-	-
2683.091	V I	35	150 R	-	2680.340	W	5	-	-	2677.589	Er	2	-	-
2683.057	Ce	2	-	-	2680.335	Na I	60 R	10	Fl	2677.578	Hf II	10	1	-
2683.016	Mn	15	15	-	2680.28	Rh	3	2	-	2677.37	Yb	-	40	Me
2682.986	Fe	-	40	-	2680.16	Fe	20	8	-	2677.36	Ne	-	[15]	Ps
2682.98	Hg	-	[3]	Dj	2680.12	Ca	-	2	Ad	2677.34	Br	-	[4]	Bl
2682.872	V	50	200 R	-	2680.108	Co	25	3	-	2677.318	Ru	12	-	-
2682.844	Zn	-	10	-	2680.08	Cd II	-	[15]	Tk	2677.293	Ce	2	-	-
2682.762	Sb	50	35	-	2680.06	Ta	30	50	-	2677.278	W	12	10	-
2682.75	Xe	-	[2]	Hu	2680.059	Pt II	-	3	Sh	2677.25	Lu	10 h	-	Me
2682.740	Ru	-	5	-	2680.057	Cb	4	80	-	2677.246	Mn	-	15	-
2682.727	Ce	10	-	-	2680.039	W	12	7	-	2677.20	Kr II	-	[6]	Me
2682.640	W	10	8	-	2679.95	Mn	-	5	-	2677.18	Xe	-	[25 h]	Hu
2682.624	Mo	20	-	-	2679.94	Tb	-	20	Ex	2677.16	Te	-	[5]	Bl
2682.61	Tl II	-	[10]	El	2679.926	Ti I	100	12	-	2677.159	Cr II	35	300 r	-
2682.592	Eu	6	-	-	2679.916	Re	30	-	-	2677.149	Pt I	800 w	200 w	-
2682.540	Rh I	2	2	-	2679.890	Cr	-	3	-	2677.135	He I	-	[5]	Pa
2682.538	V	4	15	-	2679.881	Cb	4	1	-	2677.12	P I	10	[2]	Ks
2682.518	Fe	-	40	-	2679.870	W	7	-	-	2677.119	V I	9	4 h	-
2682.467	Ob	1	10	-	2679.87	Dy	2	-	-	2677.037	Re	25	-	-
2682.455	Ir I	10	2	-	2679.86	La II	-	4 h	-	2677.025	Pd II	-	10 wh	-
2682.430	Mo	-	10	-	2679.854	Mo	30 h	20	-	2677.01	Ca	-	[2]	Bs
2682.42	Si	-	[5]	Sy	2679.827	Ce	2	-	-	2676.997	W	-	5	-
2682.371	Mn	-	12	-	2679.762	Ru	12	1 h	-	2676.972	Ru	12	-	-
2682.351	Ce	2	-	-	2679.756	Co	75 W	-	-	2676.95	Cl II	-	[150]	Ks
2682.214	Fe	30	15	-	2679.735	Os	8	1	-	2676.877	Fe	2	25	-
2682.20	In II	-	[20]	Lg	2679.703	V I	4	-	-	2676.84	Dy	3	-	-
2682.187	Os	10	3	-	2679.632	W II	8	12	-	2676.828	Ir I	35	10	-
2682.160	Zr	-	5	-	2679.578	Pd II	-	100	-	2676.762	Ru	-	18	-
2682.153	W	6	1	-	2679.57	Tm	30	50	Me	2676.755	Ce	4	-	-
2682.130	Ob	5	2	-	2679.50	Pr	-	10	-	2676.747	Mn	-	10	-
2681.99	Os	-	[8]	Bs	2679.434	Ru	-	20	-	2676.687	U	6	4	-
2681.902	W	5	2	-	2679.42	Gd	3	-	-	2676.634	V I	6	-	-
2681.869	Ta	50	-	-	2679.418	Ir I	8	5	-	2676.63	Hf II	10	12	Me
2681.791	Pt	1	10	-	2679.322	V	70	300 R	-	2676.623	Ce	4	-	-
2681.784	Rh I	2	3	-	2679.241	Ni II	-	500 wh	-	2676.542	Cr	-	3	-
2681.756	Zr II	4	1	-	2679.2	Bi II	-	2	Cf	2676.538	Zr I	3	-	-
2681.726	U	3	2	-	2679.161	Mn	-	40	-	2676.484	Mo	3	25	-
2681.725	Mn	20	15	-	2679.129	Pt II	6	50	-	2676.483	Rh I	2	2	-
2681.659	Ce	3	-	-	2679.12	Pd II	-	15 wh	-	2676.467	Ce	3	-	-
2681.65	Yt I	6	2 h	-	2679.077	Re	25	-	-	2676.412	W	9	1	-
2681.632	W	8	2	-	2679.063	Ir I	15	3	-	2676.410	U	4	4	-
2681.629	Ta	15	-	-	2679.062	Fe I	200	200	S	2676.355	Ce	2	-	-
2681.60	Rh	-	100	-	2679.008	Cb	10	2	-	2676.353	Ru	50	3	-
2681.589	Fe	50	25	-	2678.946	Ce	2	-	-	2676.35	V	-	18 h	-
2681.57	Br	-	[3]	Bl	2678.938	Th	5	-	-	2676.331	Mn	15	-	-
2681.523	Mo	15	-	-	2678.92	Ca	-	[20]	Bs	2676.310	W	-	6	-
2681.501	La II	2	10	-	2678.883	W	20	10	-	2676.28	P	-	[10]	Gu
2681.49	O	-	[7]	Mh	2678.873	V I	15	-	-	2676.25	Rh	1	100	-
2681.468	Cr I	8	3	-	2678.861	U	6	4	-	2676.190	Ru	8	100	-
2681.46	Fe	2	-	-	2678.804	Ta	3	20	-	2676.13	Yb	-	2	-
2681.413	W	20	18	-	2678.792	Cr II	10	80	-	2676.125	Cb	2	10 h	-
2681.40	Zr	4	-	-	2678.758	Ru	100	300	-	2676.121	Ce	2	-	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
2676.11	Fe	15 w	7 w	-	2673.591	W	7	20	-	2670.810	Mn	5	1	-
2676.110	Rh I	10	-	-	2673.580	U	6	6 h	-	2670.80	Fe	10	4	-
2676.080	Ti I	6	-	-	2673.574	Ta	4	-	-	2670.797	Re	50	-	-
2676.05	Eu	-	5	Ex	2673.567	Cb	10	500	-	2670.78	Lu	5 h	-	Me
2676.043	V	-	15 h	Me	2673.545	Ce	2	-	-	2670.717	Ru	8	-	-
2676.03	Ti II	-	[30]	El	2673.477	Ru	50	3	-	2670.693	W	-	5	-
2676.01	Co II	-	10 h	-	2673.409	Eu	125	50	-	2670.68	Xe	-	[2]	Hu
2675.982	Co I	10 W	5	-	2673.368	Mn	-	50	-	2670.66	Cd I	10 w	-	Fl
2675.973	V I	6	-	-	2673.286	Ta	3	-	-	2670.643	Sb	50	35	-
2675.95	Au I	250 R	100	-	2673.273	Mo	1	100	-	2670.530	Zn I	200	4	IHz
2675.944	Cb	10	100	-	2673.23	V	10	60	Me	2670.527	Os	2	1	-
2675.901	Ta	150	200	-	2673.213	Fe I	30	15	I	2670.516	U	8	6	-
2675.880	U	15	10	-	2673.208	Cs	-	2	-	2670.493	Ru	8	30	-
2675.869	W	12	2	-	2673.073	Ce	10	-	-	2670.47	Nd	5	2	-
2675.761	V I	12	2	-	2673.013	Ru	8	50	-	2670.386	W	3	15	-
2675.76	Ti II	-	[30]	Fl	2672.947	W	-	6	-	2670.384	Fe II	-	10	Do
2675.733	Ce	2	-	-	2672.906	La II	3	30	-	2670.328	Ni II	-	80	-
2675.73	W	-	12	-	2672.843	Mo	15	100	-	2670.322	Mo	25	1	-
2675.682	Cr	1	15	-	2672.831	Cr II	12	15	-	2670.255	Er	25	3	-
2675.670	Th	8	4	-	2672.803	Ir I	4	-	-	2670.240	Cr	1	10	-
2675.655	La II	2	5	-	2672.79	Kr II	-	[3]	Me	2670.236	Re I	30	-	-
2675.64	Ne I	-	[150]	Ps	2672.777	Fe	2	2	-	2670.234	V	2	70	-
2675.54	Ta	2	-	-	2672.774	Ce	25	-	-	2670.21	Cd II	-	[2]	Vs
2675.523	Ru	-	50	-	2672.77	Fe	2	-	-	2670.205	Mn	15 h	-	-
2675.506	Mn	-	25	-	2672.69	U	12 r	6 h	-	2670.152	Cb	1	5	-
2675.400	W	10	3	-	2672.68	Cd II	-	[10]	Vs	2670.07	Cr	2	12	-
2675.36	Cd	-	[2 d]	Tk	2672.67	Hg I	5	-	-	2670.07	S	-	[8]	Bl
2675.347	Er	5	1	-	2672.669	W	6	12	-	2669.98	Mo	1	15	-
2675.31	Kr II	-	[4 h]	Me	2672.65	Yb	20	80	-	2669.934	Fe	-	25	-
2675.3	bh B	60	-	L	2672.586	Mn	15	125 h	-	2669.913	Ir I	60	10	-
2675.284	Ta	-	12	-	2672.53	Br	-	[5]	Bl	2669.910	Co II	-	100 wh	-
2675.283	Fe	30	15	-	2672.506	Fe II	-	15 wh	Do	2669.792	Cs II	-	[8]	Ot
2675.25	Si	-	[5]	Sy	2672.497	Ta	20	30 h	-	2669.774	W	10	2	-
2675.24	Ne I	-	[150]	Ps	2672.45	Mg I	20	-	-	2669.641	Sb	-	3	Sp
2675.24	S	-	[8]	Bl	2672.403	Ce	2	-	-	2669.598	Ti I	60	12	-
2675.204	W	-	8	-	2672.374	Cr	1	5	-	2669.59	I	-	[20]	Bl
2675.185	Ru	-	30	-	2672.362	Ru	8	40	-	2669.585	Ce	2	-	-
2675.128	W	10	-	-	2672.342	Ta	20	-	-	2669.56	Hf II	2	4	-
2675.119	U	15	10	-	2672.280	Ce	2	-	-	2669.54	Mg I	12	-	-
2675.101	Cb	-	4 h	-	2672.246	Er	12	2	-	2669.529	Os	8	3	-
2674.99	Hg I	5	5	m	2672.22	Xe II	-	[3]	Hu	2669.496	Fe	50	25	-
2674.979	Mn	1	15	-	2672.214	Ru	-	25	-	2669.494	Zr II	-	2	-
2674.89	Br	-	[2]	Bl	2672.210	U	6	2	-	2669.462	Ir I	10	5	-
2674.885	Os	25	5	-	2672.19	Cl II	-	[50]	Ks	2669.417	Ru	-	100	-
2674.87	Yb	-	4	-	2672.173	In II	-	[25]	Ps	2669.371	Cr I	6	1	-
2674.838	Cb	1	5	-	2672.162	W	9	2	-	2669.36	Ne	-	[5]	Ps
2674.830	Ce	3	-	-	2672.148	Fe II	1 Wh	25 wh	-	2669.313	Mn	-	20	-
2674.82	Cd II	-	[2]	Tk	2672.08	Cl	-	[10]	An	2669.302	W II	15	30 d	-
2674.804	I	-	[60]	Ke	2672.074	Yt I	5 d	4	-	2669.29	Tb	10	3	Ed
2674.744	Mn	-	20	-	2672.004	V	50	300 R	-	2669.263	Ti I	15	1	-
2674.72	Fe	2	-	-	2671.985	Cr I	8	-	-	2669.26	Tm	2	8	Me
2674.704	W	10	2	-	2671.98	Yb	10	2	-	2669.20	Rh	1	15	-
2674.70	W	-	6	-	2671.967	U	2	2	-	2669.174	U	6	4	-
2674.700	Cb	2	-	-	2671.931	Cb	20	200	-	2669.166	Al II	3	100	Sy
2674.632	In II	-	[40]	Ps	2671.908	Ce	2	-	-	2669.13	Ne I	-	[3]	Ps
2674.62	Cs	-	[2]	Bs	2671.892	La	2	-	-	2669.002	Hf II	15	8	-
2674.587	Ce	2	-	-	2671.841	Re	60	-	-	2668.993	Ir I	50	5	-
2674.574	Pt	200	10	-	2671.838	Ir I	50	10	-	2668.949	W II	3	7	-
2674.568	Os	15	5	-	2671.834	Mo	1	100	-	2668.895	V I	2	4	-
2674.490	Ta	15	-	-	2671.829	Na II	12	[60]	Fr	2668.76	Cs	-	[8]	Bs
2674.480	In II	-	[40]	Ps	2671.809	Cr II	30	15	-	2668.74	Yb	2	20	-
2674.47	Sb II	-	2 h	-	2671.805	Mn	-	50	-	2668.712	Cr II	10	12	-
2674.447	Ce	2	-	-	2671.770	W	12	12	-	2668.685	In II	-	[50]	Ps
2674.441	Rh	1	200 w	-	2671.70	Cs	-	[2]	Bs	2668.623	In II	-	[30]	Ps
2674.434	Mn	2	25	-	2671.673	V I	20	2	-	2668.619	Ta	1	100	-
2674.4	Li II	-	[2]	Wr	2671.634	Ta	30	-	-	2668.609	Ru	-	10	-
2674.337	Re I	100	-	-	2671.53	Br	-	[3]	Bl	2668.598	V	-	12	-
2674.30	V	-	7 h	-	2671.490	U	3	4 h	-	2668.499	Cb	1	5	-
2674.200	Rh I	3	2	-	2671.471	Mo	10	-	-	2668.468	W	8	3 l	-
2674.195	Ru	-	50	-	2671.466	W	15	5	-	2668.345	Ru	20	-	-
2674.18	Fe	6 h	3 h	-	2671.43	Cl II	-	[6]	Ks	2668.335	Ti I	5	-	-
2674.138	W	-	6	-	2671.404	Fe II	-	25 wh	Do	2668.33	Cd II	-	[10]	Tk
2674.084	Ti	18	-	-	2671.26	I	-	[12]	Bl	2668.33	U	300 w	400	-
2674.0	Cs	-	[2]	Bs	2671.256	Cb	2	15	-	2668.291	Cb	10	3	-
2673.962	V	1	10	-	2671.25	Hf II	10	10	Me	2668.279	Hf	3	2	-
2673.95	Ho	-	10	Ex	2671.185	Ce	2	-	-	2668.233	W II	-	6	-
2673.930	Co I	25	-	-	2671.180	W	5	1	-	2668.219	Ce	2	-	-
2673.844	Mo	5	-	-	2671.055	Rh I	3	4	-	2668.20	Tm	20	20	Me
2673.80	Xe	-	[2]	Hu	2670.963	Zr II	5	5	-	2668.11	Mg I	10 h	-	-
2673.743	La II	-	3	-	2670.95	I	-	[12]	Bl	2668.07	Dy	2	-	-
2673.7	Rn	-	[7]	Pe	2670.94	Hg	-	[5]	Dj	2668.069	Ta	80	-	-
2673.677	Th	-	6	-	2670.935	Mo	-	25	-	2668.02	Xe II	-	[3]	Hu
2673.656	Cr I	6	1	-	2670.923	V I	12	4	-	2668.018	U	8	-	-
2673.607	Ir I	40	10	-	2670.887	U	6	4	-	2668.006	V	-	20 wh	-
2673.603	Ru	50	3	-	2670.84	Eu	3	-	-	2667.968	Ru	50	-	-

2667.9—2659.0 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2667.919	Fe I	50	20	-	2665.002	Ce	2	-	-	2661.665	La II	-	3	-
2667.879	Cr	-	3	-	2664.958	W	12	6	-	2661.617	Ce	4	-	-
2667.826	Mn	-	15	-	2664.93	Sn II	-	[5]	Mc	2661.613	Ru	80	150	-
2667.799	Zr II	12	12	-	2664.810	Re	25	-	-	2661.557	W	10	12	-
2667.796	Re	15	-	-	2664.786	Ir I	200 h	50	-	2661.5	bh C	12	-	L
2667.790	Ru	-	80	-	2664.757	Ru I	60	5	-	2661.48	Gd	2	1	-
2667.765	Cb	3	30	-	2664.75	La II	1	3	Me	2661.47	Kr II	-	[5]	Me
2667.675	W	-	15	-	2664.737	Ce	2	-	-	2661.423	V I	100	80	-
2667.62	In I, II	-	[5]	Lg	2664.664	Fe II	20	300	-	2661.401	Cr	-	2	-
2667.55	Pr	-	10	-	2664.640	Pt I	30	-	-	2661.39	Tb	5	-	m
2667.530	V	-	12	-	2664.49	Rh	1	30	-	2661.38	Th	8	5	-
2667.458	Ir I	10	2	-	2664.454	Ir	-	10 h	-	2661.38	Br	-	[2]	Bl
2667.395	Ru	10	150	-	2664.37	Kr II	-	[4]	Me	2661.36	La II	1 h	4	-
2667.36	Cl II	-	[40]	Ks	2664.318	W II	10	20	-	2661.352	Ce	2	-	-
2667.297	Cb	5	10	-	2664.259	Fe	-	10	Do	2661.336	Ta	200	10	-
2667.171	Ta	20	-	-	2664.235	Ta	10 h	100 h	-	2661.312	Fe	12	10	-
2667.149	Cb	2	5	-	2664.220	Re	25	-	-	2661.261	Ir	2	4	-
2667.133	Re	30	-	-	2664.209	Fe II	-	3	Do	2661.248	Sh	100	80	-
2667.082	Cb	1	5	-	2664.153	U	18	20	-	2661.22	I	-	[12]	Bl
2667.005	Mn	5	50 h	-	2664.040	Fe	15	5	-	2661.196	Fe I	10	7	-
2666.97	Yb	5	150	-	2664.031	Mn	-	25	-	2661.179	Os	20	5	-
2666.97	Au II	-	5	-	2664.00	Kr II	-	[8]	Me	2661.174	Ru	20	100	-
2666.970	Fe I	30	10	-	2663.99	P	-	[10]	Gu	2661.143	Pd II	-	100	-
2666.9	In	-	6	Cx	2663.940	W	-	8	-	2661.13	Te	-	[30]	Bl
2666.87	Th	-	6	-	2663.78	Fe	10 h	3 h	-	2661.034	Re	10	-	-
2666.83	Co II	-	3 h	-	2663.734	Ru	-	8	-	2660.996	Na II	-	[80]	Fr
2666.818	Fe I	80	15	-	2663.72	Rh	1	8	-	2660.993	Ir	5	-	-
2666.786	V	1	12 h	Me	2663.679	Cr II	6	5	-	2660.97	Kr II	-	[8 hl]	Me
2666.768	Mn	8	50 h	-	2663.669	Ir I	2	5 h	-	2660.918	Os	5	1	-
2666.751	Mo	10	10	-	2663.638	Ce	4	-	-	2660.821	Mg II	40	6	Fl
2666.74	Te	-	[15]	Bl	2663.632	Re	150	-	-	2660.755	Mg II	40	6	Fl
2666.635	Fe II	5	80	-	2663.559	Cb	2	10	-	2660.75	I	-	[20]	Bl
2666.61	Kr II	-	[6 h]	Me	2663.557	W	9	3	-	2660.640	Ti I	12	1	-
2666.594	Cb	5	50	-	2663.529	Co II	15 w	60 w	-	2660.638	Ce	4	-	-
2666.580	Ir I	4	-	-	2663.457	Er	2	-	-	2660.619	Mn	-	10	-
2666.546	Mn	8	-	-	2663.423	Cr II	12	6	-	2660.603	Ru	12	-	-
2666.54	La II	1	3	Me	2663.326	Mo	10	1 h	-	2660.579	Mo	25	125	-
2666.536	U	8	6	-	2663.314	Ir I	10	5	-	2660.536	Re	6	-	-
2666.496	Ce	10	-	-	2663.297	Ce	2	-	-	2660.522	W	10	8	-
2666.490	W II	8	20	-	2663.29	Xe II	-	[2]	Hu	2660.52	Hf II	-	2	-
2666.46	Cl II	-	[20]	Ks	2663.28	Ne	-	[8]	Ps	2660.49	Br	-	[25]	Bl
2666.412	Ir I	10	2	-	2663.271	He I	-	[4]	Ps	2660.456	Ag II	30	150	-
2666.41	Rh	2	2	-	2663.260	W	3	-	-	2660.402	Fe I	40	15	-
2666.405	Fe I	70	10	-	2663.248	V	12	100	-	2660.4	Hg	5 h	[2]	Dj
2666.296	Er	5	-	-	2663.194	Sb	2	1	Sp	2660.40	Cd I	50 h	[5]	Fl
2666.288	Cu II	-	20	IBu	2663.166	Pb	300 wh	40	-	2660.393	Al I	150 R	60	Gn
2666.211	Os	5	1	-	2662.9	bh C	12	-	L	2660.34	Mn	-	5	-
2666.178	La II	1	6	-	2662.866	Th	8	5	-	2660.19	Pd II	-	[5]	Bx
2666.135	Ce	2	-	-	2662.861	Ce	1	4	-	2660.144	U	15	10	-
2666.10	Ho	-	10 h	Ex	2662.856	Ru	-	40	-	2660.09	Tm	30	10	Me
2666.084	W	-	15	-	2662.835	W	15	10	-	2660.076	Ir I	3	-	-
2666.08	Yb	5	150	-	2662.833	Mo	10	-	-	2660.035	Cb	2	30	-
2666.021	Cr II	10	8	-	2662.82	S	-	[15]	Bl	2660.01	Yb	1	3	-
2665.986	Os	5	2 l	-	2662.721	Cb	1	3	-	2659.946	Ir I	2	-	-
2665.966	Hf II	20	35	-	2662.685	In II	-	[30]	Ps	2659.866	Ga	5	12	-
2665.964	V I	25	10	-	2662.651	Co II	-	5	-	2659.86	Th	3	1	-
2665.935	Ta	15	-	-	2662.638	W	8	3	-	2659.833	Os	30	8	-
2665.903	Ce	2	-	-	2662.626	Ir I	40	10	-	2659.792	Re	15	-	-
2665.870	U	10	6	-	2662.587	Ce	2	-	-	2659.746	Cr	-	2	-
2665.8	air	-	-	-	2662.583	In II	-	[30]	Ps	2659.716	Ce	2	-	-
2665.772	W	12 d	5 d	-	2662.57	Kr II	-	[2 hl]	Me	2659.697	W	-	12	-
2665.722	Ru	12	-	-	2662.563	Fe II	2 h	15 h	Do	2659.69	Hf	-	3 h	Me
2665.695	U	12	8	-	2662.536	Mn	-	50	-	2659.655	Ta	15	-	-
2665.65	I	-	[12]	Bl	2662.42	Nd	10	2	-	2659.615	Ru I	80	12	-
2665.642	W II	-	7	-	2662.4	K	-	[10]	Sg	2659.606	V	9	40	-
2665.62	La II	-	4	Me	2662.349	Th	10	8	-	2659.6	bh C	20	-	L
2665.60	Ta	80 d	40 h	-	2662.315	Fe	25	10	-	2659.60	Kr II	-	[2 whl]	Me
2665.57	Ti I	10 h	3	Fl	2662.205	W	1	10	-	2659.472	Rh I	3	3	-
2665.487	Mo	5	-	-	2662.170	Ce	2	-	-	2659.454	Pt I	2000 R	500 R	-
2665.361	Ru	-	3	-	2662.160	Ru	-	30	-	2659.43	Au	-	5	-
2665.31	I	-	[30]	Bl	2662.11	Te	-	[25]	Bl	2659.42	Eu	4	-	-
2665.3	Rn	-	[7]	Pe	2662.102	Ta	25	-	-	2659.41	Ta	20	10	-
2665.275	V	2	3	-	2662.056	Fe I	70	40	I	2659.29	Cd II	-	[5]	Vs
2665.271	Ce	5	-	-	2662.05	Se	-	[25]	Bl	2659.28	Yb	2	5	-
2665.251	Cb	3	300	-	2662.024	Ce	4	-	-	2659.27	I	-	[20]	Bl
2665.249	Ni II	-	125	-	2661.983	Ir I	150 h	15	-	2659.24	Fe	8	2	-
2665.185	Mn	-	15	-	2661.970	Ti I	35	5	-	2659.21	Mn	-	10 d	-
2665.177	Zr II	1	3	-	2661.886	Ta	60	-	-	2659.189	W	-	10	-
2665.154	Au	-	5	-	2661.875	Hf II	25	40	-	2659.144	Rh	4	1	-
2665.096	Mo	25	2	-	2661.864	Ru	50	-	-	2659.11	Ir	-	100	-
2665.068	Mn	10	-	-	2661.856	Cb	3	1	-	2659.084	Mn	-	25	-
2665.067	Ir I	8	-	-	2661.848	W	-	12	-	2659.052	Cb	3 h	30	-
2665.05	Ga I	-	[40]	Sy	2661.817	Ru	-	10	-	2659.025	U	8	2	-
2665.044	Er	20	5	-	2661.728	Cr II	8	6	-	2659.023	Re	25	-	-
2665.03	Yb	10	60	-	2661.715	Co	2	5	-	2659.011	Rh I	2	2	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2658.975	V	10	40	-	2656.547	V	12	1	-	2653.598	Eu	15	15 h	-
2658.93	Fe	10	2	-	2656.539	W	15	5	-	2653.586	Cr I	12	35	-
2658.92	Cr	1	5	-	2656.490	Mo	10	-	-	2653.567	W II	10	15	-
2658.91	Tb	-	500	Ex	2656.47	Zr	-	5	-	2653.561	Mn	-	15	-
2658.906	W	10	2	-	2656.460	U	5	2	-	2653.495	La I	2	-	-
2658.902	Mo	10	-	-	2656.440	Ce	4	-	-	2653.475	Cb	3	2	-
2658.876	Cb	3	5	-	2656.38	Kr	-	[15 h]	Me	2653.425	W	-	8	-
2658.862	Ta	25	50	-	2656.364	Ti	12	-	-	2653.381	Cb	5	3	-
2658.770	Ru	10	-	-	2656.248	Ru	20	150	-	2653.349	Mo	25	150	-
2658.74	Cl II	-	[100]	Ks	2656.225	V I	40	4	-	2653.321	W	6	-	-
2658.722	Pd II	20	300	-	2656.170	Mn	-	12	-	2653.32	Ca	-	2	Ad
2658.718	W	4	4	-	2656.153	W	3	-	-	2653.274	Ta	200	15	-
2658.71	Cs	-	[2]	Bs	2656.149	Fe	70	40	-	2653.150	Ru	12	5	-
2658.701	Pt I	40	5	-	2656.11	Yb	2	7	-	2653.076	Ru	-	10	-
2658.688	Re	15	-	-	2656.08	Ta	5	5 h	-	2653.029	Ir	8	5	-
2658.687	Zr I	9	1	-	2656.078	Cb	8	200	-	2653.012	W	2	9	-
2658.668	Ce	4	-	-	2656.021	W	-	8	-	2652.977	Os	10	2	-
2658.667	Th	15	10	-	2655.934	Mo	15	1	-	2652.921	V I	18	-	-
2658.65	Br	-	[7]	Bl	2655.914	Mn	5	20	-	2652.912	Re	30	-	-
2658.609	Sn	-	4	-	2655.907	Ni II	-	500 Wh	-	2652.86	Hf II	4	3	Me
2658.600	Os	50	10	-	2655.902	Rh I	2	2	-	2652.848	He I	-	[3]	Pa
2658.592	C II	18	35	-	2655.865	Cb	2	5	-	2652.83	Co	-	8	-
2658.564	W	4	-	-	2655.846	Zr I	2	-	-	2652.828	U	12	10	-
2658.51	Hg	5 h	10 h	Dj	2655.84	I	-	[20]	Bl	2652.81	B II	-	2	Sy
2658.506	V	-	15	-	2655.816	Re	25 W	-	-	2652.78	V	-	40 h	-
2658.49	Tm	20	6	Me	2655.812	Mo	-	20	-	2652.660	Rh I	100	25	-
2658.47	Fe	20	2	-	2655.8	K	-	[2]	MI	2652.609	W	10	12	-
2658.40	Eu	15 w	-	-	2655.792	Mn	5	10	-	2652.606	Sb	50	75	-
2658.395	Ru	20	2	-	2655.780	Os	8	1	-	2652.58	B II	4	2	Sy
2658.383	Ce	3	-	-	2655.778	Cr	-	2	-	2652.571	Fe II	1	40	-
2658.364	U	6	2	-	2655.7	Rn	-	[7]	Wo	2652.531	Ce	2	-	-
2658.36	Rh	2	25	-	2655.698	Cb	5	1	-	2652.489	Al I	150 R	60	-
2658.251	Fe II	-	80	Do	2655.676	V	10	100 h	Me	2652.485	Mn	3	100	-
2658.241	Ru	-	35	-	2655.675	Ta	15	-	-	2652.424	W II	-	3	-
2658.194	W	8	1	-	2655.670	W II	5	10	-	2652.35	Mo	1	10	-
2658.174	Pt I	100	10	-	2655.56	Gd	-	6	-	2652.34	Co II	3	4	-
2658.14	Ta	3 h	15 h	-	2655.549	W	4	10	-	2652.33	Hf II	-	3	Me
2658.110	Mo	40	5	-	2655.47	Ni II	-	400 wh	-	2652.323	Ta	15	-	-
2658.037	W II	10	20	-	2655.42	Hf II	2	-	-	2652.297	W II	-	2	-
2658.027	Cb	-	200	-	2655.41	Nd	5	2	-	2652.23	Yb	2	60	Me
2657.921	Fe II	-	20	-	2655.246	Er	4	-	-	2652.188	U	6	4	-
2657.890	Mn	20 wh	-	-	2655.219	Ru	20	-	-	2652.152	Ce	2	-	-
2657.837	Hf II	20	25	-	2655.19	Os	15	2	-	2652.134	Ru	8	2	-
2657.80	Lu	50	150	Me	2655.182	Re	25	-	-	2652.097	Cr	-	2	-
2657.789	Ce	2	-	-	2655.13	Fe	7	3	-	2652.042	Hg I	100	60	Cn
2657.72	Te	-	[10]	Bl	2655.121	Hg I	80	40	-	2652.012	W	8	2	-
2657.712	Ir I	10	5	-	2655.112	Ru	10	-	-	2652.006	Ce	10	-	-
2657.710	V I	7	1	-	2655.027	Mo	50 h	8	-	2651.95	A	-	[2]	Rt
2657.68	Ta	2	-	-	2654.97	Te	-	[5]	Bl	2651.902	Re	100	-	-
2657.616	Cb	15	3	-	2654.927	Ti I	20	1	-	2651.898	V I	50	4	-
2657.563	Pd II	-	200	-	2654.85	I	-	[12]	Bl	2651.874	W	2	12	-
2657.552	Cr	-	3	-	2654.810	Ru	12	5 h	-	2651.861	Mn	-	12	-
2657.52	Ne I	-	[15]	Ps	2654.771	Rh	-	25	-	2651.844	U	3	15 h	-
2657.50	Hf II	10	20	Me	2654.76	In II	-	[30]	Ps	2651.841	Ru	100	9	-
2657.498	Ir	3	3	-	2654.75	Pr	-	6	-	2651.82	Cl	-	[5]	An
2657.445	Re	20	-	-	2654.671	W	7	2	-	2651.807	Cb	2	15	-
2657.381	W	12	10	-	2654.65	In II	-	[18]	Ps	2651.768	Ir	-	5	-
2657.324	U	3	2 h	-	2654.58	U	15	6 h	-	2651.71	Yb	2	60	-
2657.32	Rh	-	70	-	2654.573	Ir I	3	-	-	2651.71	La	1	8	-
2657.296	Ta	25	-	-	2654.465	Ru	8	-	-	2651.706	Fe I	60	60	I
2657.292	V	1	35	-	2654.448	Cb	10	5	-	2651.575	Ge I	30	20	-
2657.193	Ti I	10	1	-	2654.390	V	-	5 h	-	2651.57	V	-	5 h	Me
2657.192	Ru	-	50	-	2654.327	Ru	12	-	-	2651.507	Ru	20	-	-
2657.169	Ru	30	-	-	2654.27	Fe	4	2	-	2651.503	Pt II	-	4	Sh
2657.106	Pb	-	3	-	2654.27	Cd II	-	[2]	Vs	2651.483	Ta	50	-	-
2657.00	Xe II	-	[3 h]	Hu	2654.117	Re	50	-	-	2651.48	Se	-	[10]	Bl
2657.00	Cd	10	[1]	Fl	2654.096	Er	2	-	-	2651.441	W	9 d	4 d	-
2656.984	Cb	4	2	-	2654.011	Ta	15	-	-	2651.418	Ce	2	-	-
2656.983	Mo	-	25	-	2654.008	V I	2	-	-	2651.292	Ru I	60	5	-
2656.92	Ag II	-	20 h	Fn	2653.95	Kr II	-	[6]	Me	2651.291	Fe II	-	2	-
2656.907	W	8	3	-	2653.947	Ru	-	80	-	2651.221	Ta	-	80	-
2656.906	Ti	12	-	-	2653.946	Ir I	10	5 h	-	2651.178	Ge I	40	20	-
2656.844	Ce	8	-	-	2653.91	Br	-	[2]	Bl	2651.165	Hf II	15	40	-
2656.83	Cs	-	[2]	Bs	2653.827	V I	20	15	-	2651.122	Cb	3	200	-
2656.83	Br	-	[25]	Bl	2653.790	Mo	1	20	-	2651.09	Pd II	-	10 h	Bx
2656.812	Ir I	15	3	-	2653.776	Os	12	1	-	2651.023	W	1	10	-
2656.796	Fe I	50	25	-	2653.765	Ir I	15	5 h	-	2651.01	Ne	-	[50]	Ps
2656.73	Sb	-	9 wh	-	2653.75	Yb	50	200	-	2651.006	Ce	25	2	-
2656.704	W	-	8	-	2653.743	Er	15	10	-	2650.994	Mn	-	150	-
2656.70	Rb	-	[10]	Ok	2653.738	Re	15	-	-	2650.857	Pt I	700	100	-
2656.692	Ru I	30	-	-	2653.72	Ho	-	10	Ex	2650.781	Be I	25	-	-
2656.681	Os	20	8	-	2653.703	Co II	5	40	-	2650.76	Br	-	[2]	Bl
2656.66	Ag II	1 h	15 h	-	2653.697	Ru	20	1 wh	-	2650.74	Yb	2	4	-
2656.61	Ta	200 R	2	-	2653.681	Hg I	80	40	Cn	2650.73	Si	-	[5]	Sy
2656.562	Ru	30	-	-	2653.60	Pd	-	3	-	2650.711	W	2	3 h	-

2650.7—2642.2 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2650.702	Be I	10	-	2648.162	Fe II	2	2	2645.259	V I	10	1
2650.7	Cs	-	[20]	2648.15	Kr	-	[20 wh]	2645.191	Fe	-	8
2650.682	Mo	10	1	2648.14	Tm	8	4	2645.149	W	9	4 s
2650.636	Be I	25	-	2648.105	Cr	-	2	2645.100	Ta	80	30 h
2650.615	Be I	20	15	2648.1	Ti	-	2	2645.084	Fe II	-	20
2650.591	Ru	12	5 wh	2648.054	W II	6	2	2644.927	Cb	1	5
2650.588	Th	10	5	2648.044	Mn	-	25	2644.84	Te	-	[5]
2650.584	Ce	4	-	2648.033	Cb	-	4	2644.802	He I	-	[2]
2650.550	Be I	30	-	2647.935	Ru	12	-	2644.78	Mg I	4	4
2650.492	Fe II	-	150 h	2647.927	U	6	2	2644.775	Co I	10 w	5
2650.470	Be I	100	15	2647.782	Zr I	8	-	2644.768	Re	10	-
2650.452	W	8	1	2647.76	Ne I	-	[8]	2644.7	Cs	-	[20]
2650.44	Cd II	-	[3]	2647.740	W	10	20	2644.65	Pr	-	18
2650.405	Ru	50	-	2647.730	Os	25	6	2644.614	Ru	8	100
2650.4	Pb	100	80	2647.710	V I	50	10 h	2644.603	W	10	2
2650.39	Pd II	-	6	2647.615	Mn	-	15	2644.598	Ta	20 W	50 W
2650.381	Zr II	10	8	2647.557	Fe I	100	70	2644.48	U	6	2 h
2650.351	In II	-	[18]	2647.53	U	6	2	2644.389	W	10	4
2650.28	Hf	-	4 h	2647.505	Cb	15 h	5	2644.355	V	12	100 h
2650.280	Ta	25	-	2647.472	Ta	200	10	2644.353	Mo	30	60
2650.27	Tm	20	7	2647.47	Yb	2	7	2644.32	Yb	5	40
2650.270	Co I	50 w	25	2647.42	Ne I	-	[150]	2644.264	Ti I	100	12
2650.268	W II	-	8	2647.363	U	3	2	2644.20	P	-	[25]
2650.26	Pb	-	5 h	2647.36	La II	-	4	2644.190	Ge	4	3
2650.253	Ru	-	10	2647.315	Ru	50	5	2644.186	Ir I	35	5
2650.180	U	6	2	2647.292	Hf II	40	125	2644.16	Ne I	-	[5]
2650.10	Al II	-	[30]	2647.29	A	-	[10]	2644.124	U	8	4
2650.016	Ta	8	-	2647.289	Ba II	10	40	2644.114	Os	75	10
2649.999	Mo	1	20	2647.253	Mo	20	-	2644.057	Pd II	-	2
2649.992	Ru	20	-	2647.25	Yb	-	4	2644.027	Ce	2	-
2649.983	W	9	6	2647.144	La	2	-	2644.000	Fe I	150	150
2649.940	Co I	50 w	5	2647.124	Re I	100	-	2643.891	Ta	50	-
2649.878	Th	8	4	2647.105	Ce	8	-	2643.89	W	-	5
2649.80	Te	-	[15]	2647.096	W	10	8	2643.83	Eu	4	-
2649.78	Yb	4	10	2647.056	Ni II	-	500 wh	2643.808	Mo	20	-
2649.712	Cb	1	4	2647.021	U	3	2 h	2643.750	Mn	-	15
2649.693	W	-	12 i	2647.007	Ce	3	-	2643.73	Ra II	-	[125]
2649.67	Kr II	-	[4 h]	2646.892	Os	15	5	2643.66	Yb	-	5
2649.585	Ti	12	2 h	2646.886	Pt I	1000 h	100	2643.65	V	-	12 h
2649.583	Re	20	-	2646.88	Cl II	-	[25]	2643.629	Os	6	1
2649.54	U	3	2 h	2646.84	Cd	-	[2]	2643.58	Tm	-	30
2649.52	Cd	-	[5]	2646.82	Cl	-	[3]	2643.545	U	6	2
2649.517	Cb	10	5	2646.77	Ta	50 h	50	2643.532	Cr	-	6
2649.513	Ru	30	3	2646.735	W	12	10	2643.523	Ru	4	3
2649.481	Th	10	3	2646.640	Ce	2	-	2643.50	Tm	5	-
2649.470	Pd II	-	200	2646.637	Ti I	20	15	2643.43	Se	-	[10]
2649.464	Fe II	-	70	2646.630	Ru	10	-	2643.395	Zr II	5	5
2649.460	W	2	1	2646.543	W	8	1	2643.393	Ru	-	5
2649.460	Mo	30 h	10	2646.50	Tb	-	10	2643.31	I	-	[20]
2649.42	Se	-	[50]	2646.488	Mo	25	100	2643.290	W	2	20
2649.360	V	2	100 h	2646.46	Yb	2	10	2643.252	Ta	5	-
2649.335	Os	25	6	2646.417	Co I	20 w	8	2643.242	U	6	2 h
2649.330	Ce	10	-	2646.380	Re	20	-	2643.160	V I	25	10
2649.300	Ti	20	-	2646.369	Ta	125	2	2643.132	Ru	5	30
2649.290	W	6	5	2646.32	Fe	5	-	2643.124	W II	12	15
2649.27	Kr II	-	[20]	2646.258	Cb	8	200 wh	2643.07	I	-	[12]
2649.250	Mo	10	25	2646.246	Ir I	10	5	2643.06	Kr II	-	[20 h]
2649.15	Hf II	10	20	2646.222	Ta	50	2	2643.051	Mn	-	12
2649.069	U	15	15	2646.217	Fe II	-	10	2643.00	Rh	10	5
2649.049	Re	100	-	2646.20	Cs	-	[8]	2642.977	Fe	-	2
2649.02	Mg I	12	-	2646.19	Ne I	-	[15]	2642.960	Ru I	150	-
2648.938	Mn	1	50	2646.186	W	15	10 d	2642.874	Co I	10 r	-
2648.89	Nd	10	2	2646.16	Mg I	5	-	2642.84	Hg I	15	-
2648.882	V	4	1	2646.13	Sn	-	2 h	2642.83	Tm	6	1
2648.806	Mn	20 w	-	2646.11	Ti II	-	200 wh	2642.794	Ru	-	150
2648.80	Yb	2	8	2646.016	Ru	20	150	2642.773	U	5	2
2648.789	U	10	2	2645.86	Cd	-	[5]	2642.766	Mn	-	8
2648.780	Ru	30	150	2645.840	V	15	100	2642.76	Rh	1	20
2648.736	W	6	2	2645.802	Re	20	-	2642.760	Re	125	-
2648.719	Ni II	-	80	2645.793	Mo	15	-	2642.753	Hf	15	1
2648.646	Ti I	8	1	2645.70	Ne I	-	[35]	2642.74	Ca	-	3
2648.635	Co I	5	40 w	2645.694	W	12	10	2642.723	V	-	10
2648.61	Te	-	[10]	2645.59	Si	-	[2]	2642.678	W	6	2
2648.56	Ne I	-	[25]	2645.51	Ne	-	[50]	2642.63	Cs	-	[20]
2648.54	Fe	6	2	2645.5	Rn	-	[3]	2642.615	Th	5	2
2648.505	Re	10	-	2645.47	U	20	25	2642.60	Hg I	10 wh	-
2648.470	V	2	60	2645.427	Fe I	50	10	2642.572	Cb	1	5
2648.451	Ru I	20	1	2645.410	Ir I	10	5	2642.55	Yb	3	80
2648.43	Fe	7	2	2645.373	Pt I	40	5	2642.483	Ce	3	-
2648.299	Ce	4	-	2645.343	V	4	-	2642.48	Hg I	5 h	[2]
2648.247	Ce	2	-	2645.330	Fe	-	8	2642.47	Ne I	-	[8]
2648.226	U	2	2	2645.32	Dy	3	-	2642.408	Mo	-	30
2648.216	Mo	-	2	2645.297	W	3	2	2642.344	V	6	2
2648.21	Ne I	-	[15]	2645.29	Eu	-	5	2642.270	V I	10	40
2648.19	Cl II	-	[10]	2645.273	Cb	-	10 wh	2642.26	Ho	-	10 h

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2642.238	Cb	5	300	2639.553	Fe II	1	100	2637.069	Pd II	-	100
2642.231	Mn	-	15	2639.508	Th	8	4	2637.055	Ce	4	-
2642.22	Br	-	[5]	2639.50	Cd I	75	15	2637.012	Re	20	-
2642.206	V	10	40	2639.44	Yb	5	15	2637.001	Hf	10	1
2642.168	Pd II	-	100	2639.430	Cr	30	-	2636.991	Sn	15	15 w
2642.15	Ti II	-	150 wh	2639.424	Ir I	15	5	2636.954	W	-	12
2642.116	Cr	35	3	2639.404	W	1	6 d	2636.899	Ta	100	3
2642.09	Te	-	[10]	2639.38	U	2	2 h	2636.876	Ir I	3	-
2642.08	Hf	5	-	2639.367	Ce	3	-	2636.87	Rb	-	[10]
2642.08	Kr II	-	[4 hl]	2639.350	Pt I	500	50	2636.866	Mn	-	5
2642.022	W	8	3	2639.25	Rh	2	100	2636.821	Ru	-	50
2642.015	Fe II	-	20	2639.24	Se	-	[5]	2636.755	U	1	4
2641.978	Ru	20	-	2639.17	Te	-	[5]	2636.749	I II	-	[25]
2641.933	U	18	8 h	2639.14	S	-	[8]	2636.725	Al II	-	[3]
2641.90	Yb	4	10	2639.119	Ru	60	5	2636.673	Ta	70	1
2641.796	Cr	-	8	2639.086	Zr II	20	15	2636.670	Ru	60	-
2641.65	Rh	1	10	2639.011	U	12	4	2636.670	Mo	25	150
2641.650	Pd	-	2	2638.988	La II	-	5	2636.658	Ce	2	-
2641.649	Fe I	100	60	2638.969	Ir I	5	-	2636.637	Re I	125	-
2641.616	Ru	-	100	2638.895	Cr	15	1	2636.550	W	9	2
2641.55	U	10	4	2638.880	Cb	3	8	2636.542	Ru	8	100
2641.53	O	-	[10 h]	2638.85	Hg I	2	1	2636.51	Kr II	-	[3 hl]
2641.494	Th	15	10	2638.807	Ce	5	-	2636.50	Ho	-	70
2641.493	Ce	5	-	2638.764	Eu	300	200	2636.482	Fe I	50	20
2641.49	Au I	5	20	2638.758	Mo	20	125	2636.46	Yb	-	5 h
2641.463	Ru I	12	-	2638.748	W	10	5	2636.450	Cr	-	2
2641.456	Ce	8	-	2638.74	Rh	2	100	2636.371	Ta	4	-
2641.44	C II	-	20	2638.714	Zr	3	-	2636.365	Co I	5	10
2641.406	Hf II	40	125	2638.710	Hf II	40	100	2636.355	Ce	2	-
2641.39	I	-	[40]	2638.705	Ti II	-	100 wh	2636.32	S	-	[8]
2641.375	Ba II	5	5	2638.695	Al II	-	-	2636.30	I	-	[20]
2641.368	Cr	-	2	2638.673	Ta	8	10 h	2636.29	Cd	-	[2]
2641.26	Eu	100 w	60	2638.639	Th	-	8	2636.252	U	8	4
2641.174	Os	10	-	2638.625	Al II	-	[2]	2636.172	Ti I	2	-
2641.170	Re	20	-	2638.62	Mn	-	9 d	2636.02	Co	-	40
2641.15	Mo	-	20	2638.612	W	12	8	2635.98	Ne I	-	[25]
2641.126	Fe II	-	20	2638.597	Cb	2	10	2635.942	Pd II	50	300
2641.126	U	3	2 h	2638.548	Mn	-	8	2635.929	Ta	50 h	-
2641.099	Ti I	150	20	2638.510	Ru	60	4	2635.871	Cs II	-	2
2641.077	W	-	8 l	2638.507	V	-	4	2635.865	Th	-	10 h
2641.058	Cb	2	30	2638.50	Gd	2	-	2635.861	Ru	30	100
2641.023	Re	5	-	2638.49	Cd	-	[3]	2635.837	Cb	-	5 h
2641.0	Ce	-	[2]	2638.41	Tm	7	10	2635.824	Re	20 w	-
2640.987	Mo	40 h	40 wh	2638.36	Pb	-	2	2635.812	U	8	-
2640.93	C II	-	12	2638.348	Ru	8	25	2635.808	Fe I	300	200
2640.918	Cb	5	2	2638.32	Kr II	-	[2 h]	2635.79	Hf II	12	20
2640.89	Si	-	[5]	2638.312	Ir	-	8 h	2635.639	V	1	12
2640.855	V	2	50	2638.304	Mo	25	5	2635.633	Ti II	-	50 wh
2640.77	Tm	40	8	2638.266	Ta	2	-	2635.61	Rb	-	[2]
2640.750	Ce	2	-	2638.263	Al II	-	[30]	2635.600	Mn	-	60
2640.74	Kr II	-	[2 hl]	2638.243	Fe	-	2	2635.583	Ta	8	12
2640.720	W	5	2	2638.222	W	-	10	2635.566	Mo	25	15
2640.69	Cd	-	[5]	2638.182	Al II	-	[5]	2635.55	Te	-	[350]
2640.687	V	6	2 h	2638.18	P II	-	[5]	2635.528	U	25	50
2640.646	Ce	2	-	2638.174	Mn	25	80 h	2635.464	Eu	30	30 h
2640.58	C II	-	10	2638.130	Cb	-	20 h	2635.424	Zr I	10	-
2640.54	Yb	-	15 h	2638.09	Yb	1	60	2635.42	Th	2	8
2640.518	Os	2	5 h	2637.982	Cb	2	15	2635.418	V	-	10
2640.377	Ir I	5	1	2637.958	Ce	2	-	2635.393	Fe II	-	20
2640.368	W	5	2	2637.93	Ta	1	10 h	2635.39	Yb	-	5 h
2640.36	Al II	-	[15]	2637.92	Si	-	[2]	2635.376	W II	3	18
2640.35	Te	-	[15]	2637.87	Ag	2	3	2635.354	Ru I	12	10
2640.347	U	3	2	2637.861	Mn	-	20	2635.322	Rh	3	40
2640.33	Th	5 d	2 d	2637.84	Te	-	[30]	2635.30	I	-	[60]
2640.327	Ru	60	5	2637.806	Er	-	6	2635.271	Ir I	15	3
2640.282	Mo	20	1	2637.72	Pb	-	2	2635.20	Li	-	3
2640.27	Cs	-	[8]	2637.696	U	10	6	2635.189	Mo	12	4
2640.268	V	10	4	2637.696	Al II	-	[40]	2635.17	Al II	-	[3]
2640.22	Fe	3 W	2 W	2637.649	Th	-	5 h	2635.148	Ce	20	1
2640.184	Pd II	-	70	2637.646	In II	-	[5]	2635.123	U	8	2
2640.151	Zr I	3	-	2637.644	Fe II	2	200	2635.03	Al II	-	[15]
2639.97	Ne I	-	[15]	2637.62	I	-	[20 h]	2634.990	Rh	10	4
2639.93	Hg I	5 wh	10	2637.6	Cs	-	[2]	2634.95	Cl II	-	[12]
2639.92	Pr	-	2 wh	2637.574	W II	6	15	2634.91	Co	-	20
2639.895	Th	5	2	2637.477	Cr	-	4	2634.897	Pt II	4	15
2639.89	U	8	2	2637.405	U	2	2 h	2634.878	Mo	6	-
2639.886	Cb	2	10	2637.312	Ir	3	-	2634.850	W II	6	9
2639.870	Ru	50	-	2637.23	Tm	7	8	2634.811	Dy	40	20
2639.837	U	10	2	2637.222	V	40 h	15	2634.783	Ba II	30	50
2639.835	Mn	12	80 h	2637.194	Cr	-	2	2634.772	Fe	1	1
2639.770	Ce	2	-	2637.17	Nd	5	-	2634.771	Hg I	20	12
2639.712	Ir I	100 h	15	2637.157	Mn	-	15	2634.755	Mo	10	-
2639.712	Ru	10	35	2637.149	W	3	10	2634.712	Cb	5	3
2639.60	Br	-	[3]	2637.133	Os I	150	30	2634.7	In	-	2
2639.579	U	3	2	2637.10	Fe	3 wh	1 h	2634.59	Nd	5	2

2634.5—2626.1 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2634.576	W	1	20	-	2631.543	Ti I	40	2	-	2628.673	Cb	-	30 wh	-
2634.573	Zr	2	-	-	2631.520	Ni II	-	100 wh	-	2628.63	Mg I	8	4	-
2634.547	Ce	4	-	-	2631.52	La II	-	4	Me	2628.58	Ag	1	25	-
2634.439	Os	4	1	-	2631.503	Mo	25	10	-	2628.570	Fe II	1	2	-
2634.41	Kr II	-	[6 h]	Me	2631.492	V	-	7	-	2628.54	P II	-	[5]	Gu
2634.32	Yb	3	10	-	2631.449	Cb	1	5 wh	-	2628.534	Ru	12	-	-
2634.311	Cr	-	2	-	2631.323	Fe II	150	60	-	2628.504	U	10	6	-
2634.3	Pb II	-	[20]	Ea	2631.310	Si I	60	50	FI	2628.493	Cb	10	1	-
2634.291	Os	5	1	-	2631.3	air	-	4	-	2628.479	Os	20	5	-
2634.253	Ir I	15	5	-	2631.09	Ru	-	50	-	2628.408	Cb	1	3	-
2634.20	Xe	-	[2]	Hu	2631.051	Fe II	200	125	-	2628.292	Fe II	400	400	I
2634.17	Ca	-	6	Ad	2630.977	Cb	2	10	-	2628.263	Pb II	50	10	Hz
2634.17	Cs	-	[2]	Bs	2630.94	In	-	2	Sq	2628.254	Pd II	-	200	-
2634.167	Ir I	10	-	-	2630.929	W	-	4	-	2628.250	W	12	12	-
2634.157	Cb	-	15	-	2630.92	Se	-	[35]	Bl	2628.24	Te	-	[10]	Bl
2634.123	U	4 h	2 h	-	2630.916	Cr	3	10	-	2628.202	Ir I	5	-	-
2634.105	Ta	5	-	-	2630.908	Zr II	10	6	-	2628.125	Rh	1	150	-
2633.882	W II	1	15	-	2630.795	Pd II	-	2 h	-	2628.083	V	-	7 h	Me
2633.88	Xe II	-	[3]	Hu	2630.757	Re	2	-	-	2628.044	W	-	8	-
2633.801	Mn	-	12	-	2630.732	W	6	2	-	2628.04	Yb	1	4	-
2633.797	Ru	-	80	-	2630.726	Mo	5	40	-	2628.029	Pt I	1000 w	100	-
2633.79	Ta	10 wh	80 wh	-	2630.666	V	30	150 h	-	2628.005	Cr	-	3	-
2633.64	Fe	5	1	-	2630.634	U	5	2	-	2627.961	U	8	2	-
2633.63	Cd	-	3	-	2630.63	Cd	-	[3]	Vs	2627.952	Cs II	-	[2]	Ot
2633.622	Re	40	-	-	2630.616	Ce	3	-	-	2627.906	Bi I	200 w	200	-
2633.591	V I	6	4	-	2630.566	Mn	100	15	-	2627.90	Hg II	-	[5]	Ps
2633.507	Mo	2	25	-	2630.528	Ta	10	8	-	2627.84	Cs	-	[8]	Bs
2633.457	Ru	50	1 h	-	2630.526	W II	6	9	-	2627.795	Ru	-	9	-
2633.419	Rh	2	2	-	2630.418	Rh I	10	4	-	2627.79	Rh	-	8	-
2633.333	Th	5	2	-	2630.40	Xe II	-	[5]	Hu	2627.767	Er	4	-	-
2633.325	Mn	-	20	-	2630.380	W II	1	10	-	2627.75	Kr II	-	[7]	Me
2633.288	Rh I	3	3	-	2630.352	Zr	5	-	-	2627.700	W II	1	9 s	-
2633.271	U	2	2	-	2630.334	Rh	2	50	-	2627.68	Al II	-	[60]	Sy
2633.25	Se	-	[5]	Bl	2630.330	Pd II	-	15 wh	-	2627.651	Ru	60	1	-
2633.249	Mn	8 h	-	-	2630.3	bh C	12	-	L	2627.640	Co I	50 W	-	-
2633.20	Cd	-	[2]	Vs	2630.278	Ni II	-	150 w	-	2627.551	U	-	12 h	-
2633.194	Fe	-	80	-	2630.260	Mn	15	2	-	2627.550	Mo	20	15	-
2633.161	Cb	-	200	-	2630.235	Ru	50	1 h	-	2627.444	W	8	2	-
2633.127	W	15	12	-	2630.22	Cd	-	[2]	Vs	2627.440	Cb	20	5	-
2633.11	Zr	2	-	-	2630.195	W	-	8	-	2627.41	A II	-	[2]	Rt
2633.029	U	5	15	-	2630.181	Ru	8	-	-	2627.392	Pt I	40	5	-
2633.008	Re	20	-	-	2630.153	Re	15	-	-	2627.365	Cu I	7	-	-
2632.99	Fe	10	-	-	2630.066	Fe II	10	100	-	2627.305	Ru	-	9	-
2632.979	U	15	8	-	2630.02	Ru	-	50	-	2627.24	Fe	8	-	-
2632.967	Mn	-	2	-	2630.020	Mg I	8	-	-	2627.22	Kr	-	[3 wh]	Me
2632.892	Os	5	2	-	2630.017	Th	5	2	-	2627.14	Fe	1	10	-
2632.891	Ni II	-	2000 wh	-	2630.004	Cu I	12	2 h	-	2627.128	U	6	-	-
2632.88	Mg I	10	4	-	2629.977	Ce	2	-	-	2627.055	Cb	-	5 w	-
2632.87	Br	-	[2]	Bl	2629.977	Ta	3	-	-	2627.054	Ta	4	-	-
2632.78	O	-	[10]	Mh	2629.974	Co I	30	1	-	2627.05	Yb	-	20	-
2632.711	Ru	-	80	-	2629.928	Ru	20	-	-	2627.050	Mn	-	8	-
2632.700	W	10	12	-	2629.912	Rh I	3	3	-	2627.04	I	-	[60]	Bl
2632.66	Yb	-	4	-	2629.854	U	5	2 h	-	2627.03	Au II	-	7	-
2632.66	Ga I	-	[40]	Sy	2629.850	Mo	50	6	-	2626.971	Zr II	1	3	-
2632.657	U	12	8	-	2629.824	Cr I	8	1	-	2626.95	Hf II	10	10	-
2632.61	Tb	-	10	Ex	2629.79	Tm	15	10	Me	2626.931	W	-	3	-
2632.598	Fe I	80	40	-	2629.713	V	1	70 h	Me	2626.892	Co II	-	10 Wh	-
2632.516	Cb	4 w	300 h	-	2629.587	Fe I, II	60	150	-	2626.86	Dy	2	-	-
2632.504	Ru	50	1	-	2629.548	Mn	-	35	-	2626.85	Se	-	[5]	Bl
2632.487	W	12	10	-	2629.54	Xe	-	[4]	Hu	2626.826	Ir I	2	-	-
2632.467	Pd II	-	10 wh	-	2629.498	W	-	5	-	2626.782	Cr	-	3	-
2632.418	Ti I	50	7	-	2629.409	Ir I	10	2	-	2626.780	Eu	8	-	-
2632.398	U	6	2	-	2629.364	Ru	-	10	-	2626.761	Ir	20	5	-
2632.352	Mn	12	80 h	-	2629.208	Cb	1	5	-	2626.710	W	5	1	-
2632.27	Ta	15	80	-	2629.20	Br	-	[3]	Bl	2626.640	Mn	125	5	-
2632.244	Cd I	40	[3]	-	2629.19	Fe	2	-	-	2626.633	Cb	1	5	-
2632.239	Co II	10 w	40 w	-	2629.18	S II	-	[5]	Bl	2626.63	Cu I	4	-	-
2632.236	Fe I	100	60	-	2629.154	W	6	3	-	2626.61	Rh	1	25	-
2632.127	Ru	50	2	-	2629.154	U	4	2	-	2626.599	U	2	2	-
2632.116	W	-	2 h	-	2629.096	V	4	2	-	2626.597	Cr	12	1	-
2632.106	Ce	2	-	-	2629.05	Cd I	50	10	-	2626.561	Ni II	-	500 h	-
2632.02	Tb	-	10	Ex	2629.014	Pd II	-	10 wh	-	2626.533	W	1	9	-
2631.99	I	-	[12]	Bl	2628.996	W II	2	12	-	2626.500	Fe II	3	80	-
2631.981	Mn	-	12	-	2628.928	U	15	10	-	2626.49	Br	-	[6]	Bl
2631.968	U	2	-	-	2628.892	W	9	2 h	-	2626.475	Ru	50	-	-
2631.93	La II	3	8	-	2628.851	Ta	5 h	10 wh	-	2626.453	Mn	-	20	-
2631.8	Rb	-	[40]	Ok	2628.816	Th	8	5	-	2626.403	Th	6	3	-
2631.781	W	8	2	-	2628.813	Ce	2	-	-	2626.402	Zr II	2	2	-
2631.74	Al	5	3 h	-	2628.77	Yb	-	2	-	2626.398	Cb	1	5	-
2631.72	Yb	1	4	-	2628.761	Co	3	-	-	2626.352	Ru	20	50	-
2631.663	U	-	4 h	-	2628.740	V II	4	50 h	-	2626.265	Ce	2	-	-
2631.609	Fe II	10	50	-	2628.740	Mo	40	2	-	2626.245	W	12	6	-
2631.584	Re	80	-	-	2628.729	Ru	-	100	-	2626.210	Pu	50	-	-
2631.568	Ru	60	3	-	2628.69	Tb	20	3	Ed	2626.15	P II	-	[20]	Gu
2631.553	Al II	-	[60]	Sy	2628.681	W	-	6	-	2626.11	Cd	-	3	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2626.061	Mo	3	30	-	2623.172	Cb	2 w	5	-	2620.173	Fe II	-	40	-
2626.059	Ta	2	-	-	2623.123	Fe	-	30	-	2620.068	Ru	10	6	-
2626.0	Rn	-	[12]	Wo	2623.109	W II	2	20	-	2620.060	Mo	-	15	-
2625.884	Rh I	60	25	-	2623.05	O	-	[5 h]	Mh	2620.054	V	-	4	-
2625.860	W	-	6	-	2622.972	Ce	6	-	-	2620.04	O	-	[8]	Mh
2625.855	U	5	2	-	2622.954	Cb	2	20	-	2620.03	La II	1	7	-
2625.814	Re	15	-	-	2622.90	Ne I	-	[15]	Ps	2620.023	Fe	60	-	-
2625.793	Ta	5 h	-	-	2622.898	Mn	200	15	-	2619.980	Mn	50	12	-
2625.736	Th	8	8	-	2622.863	Cr	25	2	-	2619.978	Cr	6	1	-
2625.736	Ce	10	-	-	2622.860	W II	-	10	-	2619.952	W	8	2	-
2625.674	Ir I	20	-	-	2622.84	I	-	[30]	Bl	2619.944	Os	30	8	-
2625.668	Ag II	6	15 h	-	2622.83	Fe	2 wh	2 wh	-	2619.939	Ti I	35	7	-
2625.666	Fe II	300	60	I	2622.82	Kr II	-	[2]	Me	2619.91	Yb	2	5	-
2625.585	Mn	-	100 h	-	2622.784	Ce	5	-	-	2619.883	Ir I	35	5	-
2625.566	Ru	-	6	-	2622.758	Re	30	-	-	2619.88	I	-	[20]	Bl
2625.56	Hf II	3	5	Me	2622.738	Hf II	30	80	-	2619.810	Zr I	4	-	-
2625.50	Au	-	10	-	2622.735	V	-	50 h	Me	2619.804	Ce	5	-	-
2625.490	Fe	1	60	-	2622.657	Nd	10	2	-	2619.802	Co	-	40	-
2625.462	Ta	40	-	-	2622.575	Rh I	50	25	-	2619.715	Ce	2	-	-
2625.44	Tb	-	10	Ex	2622.429	Co I	30 r	15	-	2619.671	Ru	50	5	-
2625.405	Rh	2	200 Wh	-	2622.41	O	-	[7]	Mh	2619.650	Cr	-	15	-
2625.380	Ru	-	40	-	2622.394	U	3	2	-	2619.61	Tb	-	40	Ex
2625.331	W	-	6	-	2622.335	W	6	3	-	2619.567	Pt I	300	5	-
2625.330	Pt II	35	60	-	2622.31	Br	-	[2]	Bl	2619.509	Mn	125	10	-
2625.323	Cr I	12	1	-	2622.26	Te	-	[15]	Bl	2619.490	Cr	8	-	-
2625.316	Ir I	20	-	-	2622.21	Tm	15	8	Me	2619.354	Ru	-	60	-
2625.263	U	10	6	-	2622.207	W	15	10 d	-	2619.341	Mo	20	40	-
2625.24	Hg I	10	15	m	2622.062	Co I, II	40 w	20	-	2619.296	Mn	-	15	-
2625.215	W	15	7	-	2622.003	Cb	3	2	-	2619.276	Co I	50 w	4	-
2625.214	Rh	2	-	-	2621.976	Re	30	-	-	2619.26	U	4	2	-
2625.14	S	-	[8]	Bl	2621.94	Fe	3	-	-	2619.26	Lu	30	100	Me
2625.12	Te	-	[15]	Bl	2621.83	Hf II	-	2 h	-	2619.22	Cs	-	[2]	Bs
2625.120	Mn	3	2	-	2621.818	Os	25	4	-	2619.210	Zr II	2	3	-
2625.08	Pd II	-	[30]	Bx	2621.809	U	10	2	-	2619.177	W	10	12	-
2625.00	I	-	[40]	Bl	2621.794	V	-	15 h	Me	2619.076	Fe II	5	150	-
2624.991	W	7	5	-	2621.74	Xe	-	[3]	Hu	2619.06	Yb	2	6	-
2624.915	U	12	6	-	2621.738	Ru	-	4	-	2619.053	Pd II	-	10 h	-
2624.856	V	-	25 h	Me	2621.67	Yb	1	4	-	2619.02	Ne	-	[5]	Ps
2624.82	Ga I	-	[25]	Sy	2621.668	Fe II	200	400	I	2619.020	Ru	30	1 h	-
2624.804	Mn	25	12	-	2621.593	Zr II	2	5	-	2618.97	Cd II	-	[30]	Tk
2624.78	Kr	-	[6 whl]	Me	2621.592	W	8	12	-	2618.920	Ce	4	-	-
2624.76	P II	-	[10]	Gu	2621.527	Ir I	2	-	-	2618.915	V I	4	2	-
2624.699	Ru	-	4 h	-	2621.503	Pt	1	25	Sh	2618.914	Mn	40	12	-
2624.646	Mn	3	-	-	2621.452	U	5	2	-	2618.913	Th	12	5	-
2624.64	Mo	-	10	-	2621.39	Xe	-	[3]	Hu	2618.91	Co	-	30	Ex
2624.63	Pd II	-	[3]	Bx	2621.371	Os	5	1	-	2618.84	Tm	-	30	Me
2624.63	A	-	[5]	Rt	2621.322	U	-	10 h	-	2618.807	W	12	3	-
2624.475	W	1	15 s	-	2621.264	Ru	-	12	-	2618.8	Rn	-	[20]	Wo
2624.418	Ce	2	-	-	2621.147	Re	20	-	-	2618.740	Ru	10	-	-
2624.37	Fe	5	-	-	2621.12	Yb	2	100	m	2618.706	Fe I	70	25	-
2624.360	W	3	-	-	2621.10	Ne	-	[8]	Ps	2618.633	Sn	-	3 Wh	Ar
2624.34	Tm	80	40	Me	2621.081	Ru	20	4	-	2618.597	Ru	-	3	-
2624.181	Er	10	-	-	2621.071	Mo	40 h	1	-	2618.446	Cb	1	5	-
2624.155	Ru	-	18	-	2621.032	Pt II	1	25	Sh	2618.366	Cu I	500 w	100	IBu
2624.146	W	8	1	-	2621.03	A	-	[10]	Rt	2618.261	W	-	5	-
2624.14	Fe	10	1	-	2621.000	Rh	2	2	-	2618.269	Cr I	15	1	-
2624.116	Ta	60	-	-	2620.959	U	5	4	-	2618.268	Ir I	2	-	-
2624.11	Ca	-	4	Ad	2620.953	Hf II	2	3	-	2618.19	Br	-	[3]	Bl
2624.1	Cs	-	[2]	Bs	2620.931	Ce	2	-	-	2618.17	U	3	2	-
2624.045	Mn	25 l	60	-	2620.93	Tm	5	2	Me	2618.143	Mn	50	100 h	-
2623.887	W	-	15 d	-	2620.876	Ru	20	-	-	2618.10	Be II	-	[4]	Ps
2623.830	Ru	50	-	-	2620.845	Cr	6	-	-	2618.1	Ti	-	2	Cx
2623.793	V	-	40	-	2620.822	Zr	2	-	-	2618.080	W	-	15	-
2623.78	Zn	5 h	-	Fl	2620.82	Ca	-	6	Ad	2618.017	Fe I	150	60	-
2623.755	Co I	40	3	-	2620.815	Mo	10	-	-	2618.01	Pd II	-	[4]	Bx
2623.727	Fe II	-	20	-	2620.744	W II	3	12	-	2617.878	Mo	15	-	-
2623.71	Dy	5	-	-	2620.700	Ir I	2	2 h	-	2617.87	Cd	-	[2]	Vs
2623.641	Ir	10	5	-	2620.695	Fe II	3	80	-	2617.861	Co I	50 w	-	-
2623.63	Fe	2	-	-	2620.675	Cu II	1 h	8 h	IBu	2617.796	Os	5	30	-
2623.537	U	6	2	-	2620.65	Kr	-	[6 h]	Me	2617.789	Ru	50	4	-
2623.532	Fe I	100	80	-	2620.619	Os	10	3	-	2617.781	Ir I	5	10	-
2623.509	Cb	10	3	-	2620.610	Ru	50	5	-	2617.723	Ce	3	-	-
2623.5	Rn	-	[7]	Pe	2620.588	Cb	3	1	-	2617.64	A	-	[2]	Rt
2623.454	Th	10	10	-	2620.576	Zr	-	6	-	2617.629	W II	3	12	-
2623.442	Ce	6	-	-	2620.557	Pd II	-	10 wh	-	2617.616	Fe II	300	400	I
2623.433	In II	-	[18]	Ps	2620.510	Cr	-	5	-	2617.48	Mg I	5	5	Fl
2623.42	Mo	-	30	-	2620.5	Ti	-	10 d	Cx	2617.45	I	-	[20]	Bl
2623.386	Cr	-	2	-	2620.476	Cr I	8	3	-	2617.445	Re	25	-	-
2623.368	Fe I	25	10	-	2620.448	Cb	3	200	-	2617.444	Mn	-	12	-
2623.33	Mn	12 d	1	-	2620.44	Kr II	-	[40 h]	Me	2617.441	Ru	-	5	-
2623.315	Ce	6	-	-	2620.407	Fe II	70	40	-	2617.430	Cb	-	10	-
2623.313	Cb	1	8	-	2620.349	Re	50	-	-	2617.417	Ir I	4	-	-
2623.306	Re	50 w	-	-	2620.290	V I	18	2	-	2617.41	Au	-	7	-
2623.281	In II	-	[18]	Ps	2620.226	W	12	15	-	2617.320	Sb	-	6 w	Sp
2623.21	Yb	1	5	-	2620.182	Ta	5	-	-	2617.156	W	-	4	-

2617.1—2609.4 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2617.14	Fe	8	1	—	—	2614.566	Ce	5	—	—	—	2612.1	Ca	—	—	[2]	Bs
2617.13	Cd	—	—	[2]	Vs	2614.561	Re	6	—	—	—	2612.068	Ru	100	30	—	—
2617.118	Re	25	—	—	—	2614.555	Er	3	2	—	—	2612.040	Ir I	10	—	—	—
2617.108	Ce	4	—	—	—	2614.490	Fe I	40	5	—	—	2612.03	Yb	1	4	—	Me
2617.094	Cb	—	5 h	—	—	2614.445	W	6	5 s	—	—	2612.024	Cr	8	1	—	—
2617.09	V	—	15 h	—	—	2614.41	Cu	—	5 w	—	—	2612.01	In	—	2	—	Sq
2617.066	Ru	—	50	—	—	2614.405	V	1	35	—	—	2611.872	Fe II	500	500	—	I
2617.02	Yb	3	15	—	—	2614.377	W	—	6	—	—	2611.815	Na II	—	[80]	—	Fr
2617.01	Ag II	—	—	[10 h]	Bx	2614.361	Co II	6	60 w	—	—	2611.81	Cd	—	[2]	—	Vs
2616.918	Mn	—	12	—	—	2614.31	Cb	2	20	—	—	2611.76	Rh	—	10	—	—
2616.91	Te	—	—	[5]	Bl	2614.31	In	—	2	—	—	2611.654	Ni II	—	125	—	—
2616.873	Er	4	1	—	—	2614.30	Zn II	—	[10]	Vs	—	2611.628	Cr	—	3	—	—
2616.782	Mo	30	5	—	—	2614.293	Hf II	6	—	—	—	2611.627	Mo	15	—	—	—
2616.755	Pt II	10	60	—	—	2614.292	Ce	2	—	—	—	2611.625	U	5	2	—	—
2616.711	Re	5	—	—	—	2614.26	Ne I	—	[5]	Ps	—	2611.604	Re	30	—	—	—
2616.71	Kr II	—	—	[10 h]	Me	2614.198	Ir I	10	2	—	—	2611.580	W	—	6	—	—
2616.68	V	—	15 h	—	—	2614.180	Fe II	—	3	—	—	2611.510	Ru	3	80	—	—
2616.62	Ne I	—	—	[25]	Ps	2614.178	Pb	200 r	80	Hz	—	2611.485	Ti I	15	2	—	—
2616.606	Hf	10	8	—	—	2614.178	Sn	5	5	—	—	2611.459	Ta	15	—	—	—
2616.57	Au	—	8	—	—	2614.173	Ta	200 wh	—	—	—	2611.396	W	7	—	—	—
2616.508	Mn	—	60	—	—	2614.128	Co I	30	—	—	—	2611.340	Ta	100	—	—	—
2616.479	Cb	15	3	—	—	2614.1	K	—	[5]	Sg	—	2611.332	Fe II	—	1	—	—
2616.44	Fe	5	3	—	—	2614.068	Ru	60	3	—	—	2611.330	Os	8	1	—	—
2616.36	Eu	—	2 h	—	—	2614.037	Mn	—	5	—	—	2611.295	Ir I	80	10	—	—
2616.339	W	6	3	—	—	2613.952	U	10	4	—	—	2611.285	Ti I	80	15	—	—
2616.329	Ru	—	18	—	—	2613.931	Cb	1	30	—	—	2611.274	W	—	8	—	—
2616.32	Fe	3	—	—	—	2613.897	Ce	15	1	—	—	2611.256	V I	20	10	—	—
2616.314	La II	1	7 hl	—	—	2613.854	Cb	3	30 h	—	—	2611.209	Sc II	5	10 wh	—	—
2616.31	Tm	8	15	—	Me	2613.823	Fe II	400	400	I	—	2611.199	Mo	25	15	—	—
2616.27	Cs	—	[8]	Bs	—	2613.823	W	15	9	—	—	2611.14	U	6	2 h	—	—
2616.261	Co I	40 w	2	—	—	2613.756	Re	25	—	—	—	2611.102	W	5	—	—	—
2616.248	V	4	70	—	—	2613.719	Mo	15	—	—	—	2611.072	Fe II	20	80	—	—
2616.230	Cr	—	6	—	—	2613.715	Bi	8	2	Om	—	2611.048	Ru	50	5	—	—
2616.218	Cb	2	30	—	—	2613.653	Pb	50 R	5	—	—	2611.045	Cr	—	2	—	—
2616.21	Br	—	[3]	Bl	—	2613.603	Hf II	20	80	—	—	2610.985	Ce	2	—	—	—
2616.073	Rh	2	3	—	—	2613.6	Cs	—	[2]	Bs	—	2610.98	Kr	—	[10 h]	—	Me
2616.068	U	12	6	—	—	2613.59	Ne I	—	[30]	Ps	—	2610.93	Br	—	[5]	—	Bl
2616.046	W	—	3	—	—	2613.59	Tm	5	6	Me	—	2610.891	V I	7	2	—	Me
2616.02	Cd	—	—	[2]	Vs	2613.589	Mn	12	2	—	—	2610.87	Yb	3	20	—	—
2616.0	Rn	—	[12]	Pe	—	2613.576	Fe II	2	5	Do	—	2610.849	Mn	—	10	—	—
2615.998	Ir I	10	2	—	—	2613.503	Cr	—	2	—	—	2610.790	Cr	—	6	—	—
2615.99	Tm	5	6	—	Me	2613.492	Co	25	—	—	—	2610.782	Os	20	6	—	—
2615.962	Os	5	1	—	—	2613.434	Pd II	—	100	—	—	2610.775	Ce	2	—	—	—
2615.950	U	6	2	—	—	2613.40	Lu	30	100	Me	—	2610.759	Co I	40 w	—	1 h	—
2615.881	Ir I	8	2	—	—	2613.311	Cr	10	1	—	—	2610.757	I	—	[30]	—	Ke
2615.877	Ce	4	—	—	—	2613.24	Fe	10	2	—	—	2610.749	Fe I	40	4	—	—
2615.87	Fe	3	—	—	—	2613.233	Re	15	—	—	—	2610.745	W	8	4	—	—
2615.75	Pr	—	3	—	—	2613.206	Ru	5	10 wh	—	—	2610.646	U	2	2	—	—
2615.695	W	1	8	—	—	2613.19	Fe	15	—	—	—	2610.64	V	—	40 h	—	—
2615.681	Re	10	—	—	—	2613.12	Cd	—	[2]	Vs	—	2610.588	W	1	8	—	—
2615.656	Ta	50	1	—	—	2613.097	La II	—	4	—	—	2610.572	Mn	—	8	—	—
2615.59	Zr II	—	4	—	—	2613.079	Mo	40 h	20	—	—	2610.531	Ce	2	—	—	—
2615.465	Ta	50	1	—	—	2613.073	U	2	—	—	—	2610.515	Fe	—	1 h	—	—
2615.453	Ce	5	—	—	—	2613.072	W	12	10	—	—	2610.492	W	—	6	—	—
2615.445	W II	6	20	—	—	2613.068	Zr	2	—	—	—	2610.401	U	6	4 h	—	—
2615.422	Fe	25	10	—	—	2613.058	Os	50	10	—	—	2610.335	La II	10	150	—	—
2615.42	Lu	100	250	—	Me	2613.03	Pd II	—	10 h	—	—	2610.334	Ce	2	—	—	—
2615.420	Er	15 l	10	—	—	2612.925	Re	10	—	—	—	2610.294	Cr I	8	—	—	—
2615.40	V	—	50 wh	—	—	2612.917	Ru	5	—	—	—	2610.275	Cb	10	2	—	—
2615.391	Mo	25	3	—	—	2612.91	I	—	[12]	Bl	—	2610.26	B	—	2	—	Sy
2615.335	Co I	10	2 h	—	—	2612.86	Lu	3 h	—	Me	—	2610.259	Mo	15	—	—	—
2615.26	Yb	3	12	—	—	2612.855	Mn	15	2	—	—	2610.201	W	8	1	—	—
2615.250	Ta	40	—	—	—	2612.771	Fe I	50	10	—	—	2610.200	Mn	15	100 h	—	—
2615.193	Ni II	—	900 h	—	—	2612.74	Au	—	3	—	—	2610.140	Cs II	—	[6]	—	Ot
2615.13	Cl II	—	[10]	Ks	—	2612.724	Re	20	—	—	—	2610.129	Ta	10	—	—	—
2615.122	W	10	3	—	—	2612.648	W	2	12	—	—	2610.103	Ir	2	—	—	—
2615.12	Pd	—	[25]	Bx	—	2612.630	Co II	—	20 wh	—	—	2610.092	Ni II	—	900 h	—	—
2615.120	U	2	2 h	—	—	2612.630	Os	20	5	—	—	2610.078	Ru	—	60	—	—
2615.093	Ru	60	100	—	—	2612.627	Mn	—	12	—	—	2609.962	Hf	5	—	—	—
2615.01	I	—	[12]	Bl	—	2612.62	Yb	1	4	—	—	2609.905	Ir I	4	1 h	—	—
2614.984	Ir I	25	5	—	—	2612.609	Ta	50	40	—	—	2609.900	Ce	8	—	—	—
2614.96	Cd	—	[2]	Vs	—	2612.59	Hf	4	3	—	—	2609.871	W	5	1	—	—
2614.872	Fe II	—	10	—	—	2612.555	Cr	—	2	—	—	2609.866	Fe II	—	40	—	—
2614.865	Ru	—	30	—	—	2612.515	Ru	—	80	—	—	2609.862	Pd II	—	200	—	—
2614.763	Cb	—	30	—	—	2612.456	U	10	4	—	—	2609.855	Th	10	5	—	—
2614.70	I	—	[30]	Bl	—	2612.382	Cb	8	2	—	—	2609.809	V	—	12	—	—
2614.67	Mg I	5	2 h	—	—	2612.379	Er	4	—	—	—	2609.77	Ti I	30 R	—	—	Fl
2614.666	Sb	4	3	—	—	2612.301	Sb	50	60	—	—	2609.72	Zr II	—	5	—	—
2614.64	Cl	—	[3]	An	—	2612.289	Mo	10	6 h	—	—	2609.602	V	—	6	—	—
2614.63	Cr	—	6	—	—	2612.26	Cb	—	5 wh	—	—	2609.589	W	4	—	—	—
2614.62	Cs	—	[8]	Bs	—	2612.259	Ir I	10	2	—	—	2609.57	Ca	—	4	—	Ad
2614.610	Pt I	10	—	—	—	2612.204	Cr	8	—	—	—	2609.560	Os	20	4	—	—
2614.59	Ag II	—	300 wh	—	—	2612.19	Cd	—	[3]	Vs	—	2609.552	Mn	—	15	—	—
2614.59	Hf	—	3 h	—	Me	2612.188	W	10	15	—	—	2609.502	Ce	12	—	—	—
2614.586	Ru	50	4	—	—	2612.181	Zr I	4	—	—	—	2609.485	Ru	30	6	—	—

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2609.48	Au	—	5	—	2607.03	Hf II	30	80	—	2604.552	Ir I	10	2	—
2609.47	Tm	7	5	Me	2606.975	W II	—	8	—	2604.408	Co	—	30	—
2609.437	Fe II	—	10	—	2606.944	Ru	10	15	—	2604.356	Mn	—	10	—
2609.435	Cb	—	4	—	2606.93	Xe	—	[3]	Hu	2604.32	Ti II	—	[5]	El
2609.431	Zr I	6	—	—	2606.904	W II	—	8	—	2604.318	Ru	12	—	—
2609.43	Ca	—	[20]	Bs	2606.825	Fe I	200	30	—	2604.31	U	6	2	—
2609.41	Se	—	[10]	Bl	2606.726	U	10	4	—	2604.294	V I	12	1	Me
2609.399	Re	20	—	—	2606.654	Mg I	8	2 h	—	2604.197	Zr II	3	5	—
2609.312	Cu	—	30	—	2606.651	Fe	4	—	—	2604.18	Cl II	—	[8]	Ks
2609.264	Hf II	—	2	—	2606.583	Mn	—	8	—	2604.152	Cr	—	4	—
2609.258	U	15	2	—	2606.58	Mo	—	20	—	2604.120	Ru	—	80	—
2609.241	W	2	10	—	2606.555	W II	—	10	—	2604.096	Ti II	4	12	—
2609.223	Th	—	10	—	2606.543	Ta	3	—	—	2604.049	Fe	—	4	—
2609.22	Mo	—	40 wh	—	2606.523	Cr	—	5	—	2604.045	In II	—	[30]	Ps
2609.220	Fe	10	1	—	2606.520	U	8	6	—	2604.042	W	—	6	—
2609.203	Os	8	4	—	2606.504	Fe II	—	80	—	2604.03	Yb	2	8	—
2609.17	Rh	3	200	—	2606.440	Rh	8	5	—	2604.01	Fe	3	—	—
2609.126	Fe II	—	20	—	2606.42	U	3	1	—	2604.01	Ti II	—	[2]	El
2609.12	Yb	—	4	Me	2606.42	Ta	—	10	—	2603.948	U	3	2	—
2609.116	Ce	2	—	—	2606.40	Se	—	[5]	Bl	2603.88	Mg I	8	5	—
2609.057	Ru I	80	12	—	2606.387	Ni II	—	600 h	—	2603.870	Re	100	—	—
2609.039	U	4	2	—	2606.386	W	10	—	—	2603.84	Hg I	3	—	Di
2608.999	Ta	80	1	—	2606.372	Hf II	25	50	—	2603.822	Ta	25	—	—
2608.99	Ti I	80 R	10	Fl	2606.343	Pd II	—	5 h	—	2603.802	Ru	12	—	—
2608.962	Cb	2	10	—	2606.31	Fe	10	—	—	2603.734	Cb	2	10	—
2608.907	Ir I	2	—	—	2606.275	W II	—	9	—	2603.725	Cr	—	2	—
2608.864	Mo	15	10	—	2606.252	Mn	—	5	—	2603.72	P II	—	[5]	Qu
2608.851	Fe II	—	20	—	2606.204	Cb	—	5 wh	Me	2603.72	Cs	—	[2]	Bs
2608.841	Cb	3	1	—	2606.20	Ru	—	20 wh	—	2603.719	Mn	5	50	—
2608.806	Mn	—	20	—	2606.20	Pd II	—	[4]	Bx	2603.681	Pt II	—	5	—
2608.685	Cb	1	4	—	2606.18	Br	—	[6]	Bl	2603.68	I	—	[12]	Bl
2608.67	Dy	3	—	Ed	2606.16	Ag II	10	200 wh	—	2603.590	Ce	4	—	—
2608.67	Sn II	—	[3]	Mo	2606.151	U	2	2	—	2603.573	Ta	5	300	—
2608.640	Zn I	300	100	Hz	2606.122	Co I	40	—	—	2603.570	Cr I	30	1	—
2608.627	Ta	125	4	—	2606.088	Ce	4	—	—	2603.565	Fe	20	3	—
2608.578	Fe	100	10	—	2606.066	Cr	—	2	—	2603.551	U	6	6 h	—
2608.57	Tb	10	20	Ed	2606.02	P II	—	[10]	Gu	2603.544	W	12	7	—
2608.558	Zn I	200	50	I Hz	2606.02	Tm	20	10	Me	2603.493	Ta	10	15	—
2608.501	Re	25	—	—	2605.963	W II	2	8	—	2603.463	Re	25	—	—
2608.451	Hf	10	5	—	2605.933	Mo	5	10	—	2603.444	Ce	2	—	—
2608.437	W	—	4	—	2605.905	Fe	—	20	—	2603.41	V	—	20 h	—
2608.432	Mn	—	20	—	2605.892	W	6	2	—	2603.39	Lu	5	—	Me
2608.4	Pb II	—	[5]	Ea	2605.89	Te	—	[10]	Bl	2603.36	Cl II	—	[100]	Ks
2608.396	Cr	8	—	—	2605.857	Ru	50	3	—	2603.321	Rh	—	100	—
2608.393	Zr I	2	—	—	2605.809	Ta	3	—	—	2603.316	Mo	15	1	—
2608.327	Th	5	2	—	2605.74	U	4	2	—	2603.309	Cb	3	1	—
2608.318	W	12	5	—	2605.70	Cl II	—	[2]	Mu	2603.28	Lu	5	—	Me
2608.246	Ir I	50	10	—	2605.688	Mn II	100 R	500 R	—	2603.253	Mn	—	8	—
2608.200	Ta	15	—	—	2605.678	Pd	—	2	—	2603.220	Os	5	1	—
2608.197	U	25	6	—	2605.677	Co	30	200	—	2603.15	Hg I	20 wh	20	m
2608.18	Te	—	[5]	Bl	2605.67	Cl II	—	[5]	Ks	2603.15	Br	—	[5]	Bl
2608.162	Cr	—	4	—	2605.653	Fe I	80	10	—	2603.142	Pt I	300	—	—
2608.12	Ti	—	15 h	—	2605.611	Cr	—	4	—	2603.114	Mn	—	8	—
2608.094	Mn	—	2	—	2605.55	I	—	[20]	Bl	2603.021	W II	5	15	—
2608.07	Br	—	[5]	Bl	2605.54	Xe	—	[25]	Hu	2603.02	Tb	3	20	Ex
2608.065	Pt II	—	5	—	2605.507	W	12	2	—	2603.016	U	6 h	2	—
2608.054	V	—	5	—	2605.474	W II	—	4	—	2602.96	I	—	[12]	Bl
2607.98	V	—	30 h	Me	2605.45	P	—	[20]	Gu	2602.96	As	—	12	Ro
2607.918	Ru	8	35	—	2605.42	Tb	—	10	Ex	2602.96	V	—	20 h	—
2607.906	Cr	1	35	—	2605.415	Fe II	—	40	—	2602.927	Re	25	—	—
2607.87	Yb	3	7	—	2605.40	Ca	—	[20]	Bs	2602.885	Ru	—	20	—
2607.854	Mn	—	2	—	2605.378	Ce	4	—	—	2602.868	Hf	4	4	—
2607.840	Ta	20 h	150	—	2605.349	Ru	50	4	—	2602.804	W	12	2	—
2607.81	Fe	2 w	—	—	2605.347	Ni II	—	250 wh	—	2602.798	Mo	25	100	—
2607.810	W	1	9	—	2605.319	Ta	10	—	—	2602.772	Ce	2	—	—
2607.766	V	10	2	—	2605.303	Fe II	—	50	—	2602.760	Pd II	20	200	—
2607.732	W	1	9	—	2605.151	Ti I	100	12	—	2602.720	Mn	—	80	—
2607.633	Cr	—	3	—	2605.084	V I	4	2	Me	2602.672	Er	3	—	—
2607.519	Ir I	10	2	—	2605.075	Mo	15	5	—	2602.668	Hf	7	5	—
2607.482	Th	4	2	—	2605.07	I	—	[20]	Bl	2602.62	Se	—	[15]	Bl
2607.47	Ga I	—	[15]	Sy	2605.068	Cb	1	40	—	2602.550	Re	10	—	—
2607.380	U	5	2	—	2605.057	Pd	3	—	—	2602.512	W	10	25	—
2607.378	W	12	5	—	2605.040	Fe	—	80	—	2602.488	Cb	1	5	—
2607.374	Mo	50 h	5	—	2605.016	Cb	1	40	—	2602.45	Mg I	6	—	—
2607.347	Ru	12	—	—	2604.95	Bl II	—	2	Cf	2602.419	W	3	—	—
2607.344	Ce	5	—	—	2604.89	C II	—	2	En	2602.418	U	4	12 h	—
2607.32	Lu	—	4 h	Me	2604.88	Er	4	1	—	2602.377	Ta	40	—	—
2607.32	I	—	[30]	Bl	2604.878	Ti I	7	—	—	2602.34	V	—	10	—
2607.316	Re	20	—	—	2604.867	Fe	18	—	—	2602.249	Ru	—	100	—
2607.284	Mn	—	3	—	2604.758	Fe	20	1	—	2602.18	Cd I	25 h	[5]	Fl
2607.243	Hf II	10	20	—	2604.756	Zr	2	2	—	2602.142	Ag	—	2 h	—
2607.13	V	15	—	—	2604.754	Cb	2	40	—	2602.135	Mn	12	—	—
2607.087	Fe II	300	400	—	2604.663	U	2	2 h	—	2602.11	Kr II	—	[7]	Me
2607.05	Br	—	[5]	Bl	2604.61	Eu	18 w	—	—	2602.088	Ce	2	—	—
2607.05	Tm	50	30	Me	2604.604	Os	20	3	—	2602.06	Au	—	3	—

2602.0—2594.4 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2602.04	Ga	-	3	-	KI	2599.15	Yb	2	50	m	-	2596.827	Mn	-	-	50 r	-
2602.035	Ir I	15	2	-	-	2599.131	Fe	1	-	-	-	2596.781	Re	25	-	-	-
2602.007	Cb	4	2	-	-	2599.129	Os	5	1	-	-	2596.768	Mo	20	-	-	-
2601.973	Mn	-	10	-	-	2599.090	Ta	2	-	-	-	2596.74	Yb	2	3	-	-
2601.963	W	15	6	-	-	2599.040	Ir I	25	10	-	-	2596.73	Kr	-	-	[5 wh]	Me
2601.96	Mo	1	20	-	-	2599.036	Mn II	2	12	-	Cz	2596.692	Os	10	3	-	-
2601.880	Re	30	-	-	-	2598.97	Dy	3	-	-	-	2596.68	Hf	-	3 h	-	Me
2601.845	Cr	-	3	-	-	2598.902	Mn	5	100 wd	-	-	2596.678	Ba I	40	-	-	Sz
2601.836	Cb	4	2	-	-	2598.883	Cb	-	150	-	-	2596.667	W	12	3 s	-	-
2601.830	Mn	-	10	-	-	2598.859	U	4	2 h	-	-	2596.607	Ta	20	-	-	-
2601.825	Mo	15	-	-	-	2598.854	Fe	20	-	-	-	2596.585	Ti I	40	4	-	-
2601.777	La II	-	5	-	-	2598.851	Hf II	-	2	-	-	2596.50	Tm	7	-	-	Me
2601.756	In I	50 R	15 wh	-	Ps	2598.813	Cu II	-	200	IBu	-	2596.485	Ce	3	-	-	-
2601.691	Mo	20	1	-	-	2598.802	In II	-	[18]	Ps	-	2596.48	I	-	-	[12]	Bl
2601.54	Br	-	[4]	-	Bl	2598.766	Ru	4	50	-	-	2596.450	Ta	80	150	-	-
2601.537	U	6	12	-	-	2598.746	Ta	15	-	-	-	2596.44	Eu	-	5	-	-
2601.48	Cd	-	[2]	-	Vs	2598.738	W II	12	20	-	-	2596.434	Fe	3	-	-	-
2601.460	Ru	30	5	-	-	2598.7	Cs	-	[2]	Ba	-	2596.402	Re	25	-	-	-
2601.433	W II	2	15	-	-	2598.692	In II	-	[10]	Ps	-	2596.358	Ce	2	-	-	-
2601.345	Mo	20	-	-	-	2598.68	Ag II	10	10 h	m	-	2596.343	W	-	10	-	-
2601.291	Cb	4	200	-	-	2598.68	W II	3	3	-	-	2596.32	La II	-	3	-	Me
2601.28	Zr II	2	5	-	-	2598.593	Re	6	-	-	-	2596.30	Yb	2	7	-	-
2601.16	Br	-	[15]	-	Bl	2598.581	Ru	20	-	-	-	2596.173	Cr	-	6	-	-
2601.126	Ni II	-	2000 h	-	Me	2598.47	Fe	1	-	-	-	2596.16	Yb	2	6	-	-
2601.09	Tm	8	2	-	Me	2598.45	Hg	-	[5]	Dj	-	2596.13	Cd	-	[3]	-	Vs
2601.076	V	-	40 h	-	Me	2598.421	W	10	5	-	-	2596.118	U	4	2	-	-
2601.055	Ta	50	5 wh	-	-	2598.42	Xe	-	[4]	Hu	-	2596.116	Ta	30	10 wh	-	-
2600.980	Co I	10 w	3	-	-	2598.369	Fe II	700	1000 h	I	-	2596.112	W	5	-	-	-
2600.94	Zn I	10 wh	-	-	Fl	2598.284	Ir I	8	-	-	-	2596.10	Pr	-	2	-	-
2600.885	Th	15	4	-	-	2598.250	Ce	5	-	-	-	2596.091	La II	-	20	-	-
2600.878	Ce	3	-	-	-	2598.21	Ta	2 s	50	-	-	2596.005	Os	12	3	-	-
2600.871	Re	25	-	-	-	2598.174	Mn	12	-	-	-	2596.00	Pt	200	20	-	-
2600.869	La II	-	2	-	-	2598.107	W	6	-	-	-	2595.969	Pd II	3	150	-	-
2600.85	Yb	1	3	-	-	2598.072	Rh	4	3	-	-	2595.94	Br	-	[5]	-	Bl
2600.798	V I	4	-	-	Me	2598.062	Sb I	200	100	-	-	2595.940	Mg I	8	5 h	-	-
2600.79	Cd	-	[2]	-	Vs	2598.041	Cb	2	10	-	-	2595.932	Ru	8	-	-	-
2600.788	Ce	2	-	-	-	2598.028	Fe II	4	4	-	Do	2595.829	Ir	3 h	25 h	-	-
2600.77	Dy	4	-	-	-	2598.000	Ir I	2	-	-	-	2595.796	Ru	-	100	-	-
2600.749	Os	5	1	-	-	2597.964	Re	20	-	-	-	2595.761	Mn	200	25	-	-
2600.737	W	12	5	-	-	2597.953	W	-	12	-	-	2595.761	W II	1	10	-	-
2600.71	Tb	-	20	-	Ex	2597.943	Fe II	-	3	-	Do	2595.70	S	-	[8]	-	Bl
2600.635	Th	-	15	-	-	2597.89	I	-	[4]	-	Bl	2595.649	Mn	-	25	-	-
2600.61	Bi	12 h	2	-	To	2597.862	Ir	3	-	-	-	2595.639	U	20	-	-	-
2600.588	Mn	-	10	-	-	2597.828	Fe	6	-	-	-	2595.63	Ru	-	8 h	-	-
2600.52	Se	-	[5]	-	Bl	2597.793	Ru	-	20	-	-	2595.627	Ag II	-	40 wh	-	-
2600.518	W	-	12	-	-	2597.752	Cb	-	15 wh	-	-	2595.61	Hf II	-	3	-	Me
2600.452	Os	8	2	-	-	2597.73	Kr II	-	[7]	-	Me	2595.586	Ta	40 d	50 h	-	-
2600.434	Ce	3	-	-	-	2597.726	W	10	4	-	-	2595.575	Ce	4	-	-	-
2600.366	Mo	20	1	-	-	2597.689	U	25	15	-	-	2595.568	W	2	20	-	-
2600.36	Cs	-	[20]	-	Bs	2597.683	Rh I	2	2	-	-	2595.558	Cr	-	6	-	-
2600.347	La II	-	4	-	-	2597.572	O	10	2	-	-	2595.530	Re	-	3 wh	-	-
2600.32	Cd	-	[2]	-	Vs	2597.518	Ru	10	18	-	-	2595.428	Fe	3	-	-	-
2600.3	bh C	20	-	-	L	2597.51	Ho	-	20	-	Ex	2595.425	Ru	10	-	-	-
2600.282	U	2	2	-	-	2597.510	Mn	-	10	-	-	2595.403	Mo	25	20	-	-
2600.267	Mn	1	10	-	-	2597.493	Ta	2	-	-	-	2595.385	U	6	6 h	-	-
2600.266	Cu II	1 h	200	-	IBu	2597.470	W	-	7	-	-	2595.36	Kr II	-	[4 wh]	-	Me
2600.218	W	10	2	-	-	2597.376	Mo	2	30	-	-	2595.33	Te	-	[5]	-	Bl
2600.202	Fe	10	-	-	Bu	2597.353	Ir I	12	4	-	-	2595.30	Pr	-	5	-	-
2600.19	Yb	1	3	-	-	2597.326	Ru	30	-	-	-	2595.294	Fe II	-	3	-	-
2600.17	Dy	5	-	-	-	2597.312	U	2	2	-	-	2595.261	Ta	50	2	-	-
2600.152	Cb	12	10	-	-	2597.31	Th	-	10 d	-	-	2595.237	Re I	60	-	-	-
2600.15	Tb	-	20	-	Ex	2597.31	Tb	-	10	-	Ex	2595.21	Ne	-	[50]	-	Ps
2600.141	Ta	80	-	-	-	2597.291	Os	4	1	-	-	2595.19	Tb	-	10	-	Ex
2600.12	Mo	-	10	-	-	2597.289	W	5	2	-	-	2595.15	Ra II	-	[4]	-	Rs
2600.10	Fe	10	-	-	-	2597.27	Yb	1	20	-	-	2595.096	V	-	70 h	-	-
2599.916	Pt I	5	-	-	-	2597.225	Mo	20	-	-	-	2595.036	Er	10	3	-	-
2599.915	Ti I	70	10	-	-	2597.201	Os	5	2	-	-	2595.033	Th	7	5	-	-
2599.907	Os	12	3	-	-	2597.193	V	-	12	-	-	2594.989	U	2	4	-	-
2599.871	Mn	10	1	-	-	2597.18	Al II	-	[50]	-	Sy	2594.98	Tm	6	6	-	Me
2599.859	Re	80	-	-	-	2597.147	Ru	-	50 h	-	-	2594.967	Cb	1	5	-	-
2599.805	U	4	2	-	-	2597.139	Cb	8	3	-	-	2594.965	Na II	-	[2]	-	Fr
2599.764	W	2	12	-	-	2597.13	Mo	-	20 h	-	-	2594.91	Yt	5	-	-	-
2599.661	Fe	6	-	-	-	2597.07	Rh	3	150	-	-	2594.853	Re I	40	-	-	-
2599.658	Ru	10	25	-	-	2597.05	Tb	-	10	-	Ex	2594.852	Ru	60	4	-	-
2599.643	Mo	20	1	-	-	2597.050	Th	20	5	-	-	2594.804	W	-	10	-	-
2599.642	W II	1	5	-	-	2597.047	Ce	8	-	-	-	2594.787	Ce	2	-	-	-
2599.570	Fe I	1000	-	-	-	2597.01	Xe II	-	[5]	-	Hu	2594.740	Cb	3	80	-	-
2599.521	Cb	-	5 wh	-	-	2597.003	U	3	2	-	-	2594.720	Mn	1	12	-	-
2599.400	Ir	40	-	-	-	2596.968	Cb	-	5 h	-	-	2594.629	Ti I	5	-	-	-
2599.397	Ta	100	30	-	-	2596.95	Cs	-	[20]	-	Bs	2594.543	W	4	15 l	-	-
2599.396	Fe II	1000	1000 h	-	-	2596.941	Re	25	-	-	-	2594.536	Ta	6	-	-	-
2599.22	Fe	1	-	-	-	2596.924	Rh	2	2	-	-	2594.5	bh C	2	-	-	L
2599.215	Hf II	10	10	-	-	2596.86	Xe	-	[3]	-	Hu	2594.49	Yb	2	5	-	m
2599.207	Co I	5	-	-	-	2596.858	W II	1	15 s	-	-	2594.45	Br	-	[4]	-	Bl
2599.182	Mo	1	15	-	-	2596.85	Pr	-	6	-	-	2594.423	Sn	60	80	-	-

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities			
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
2594.4	Tb	-	10	-	Ex	2591.822	Mn	-	5	-	-	2588.964	Ir I	3	-	-	-
2594.40	Kr II	-	[4]	-	Me	2591.770	Mo	2	25	-	-	2588.957	Mn	-	80	-	-
2594.392	Ru	-	35 wh	-	-	2591.740	W	-	6	-	-	2588.946	Zr	15	-	-	-
2594.338	Cb	2	10	-	-	2591.686	Co I	10 r	3	-	-	2588.92	Ga	-	5	KI	-
2594.275	U	5	2	-	-	2591.646	Ir	2	-	-	-	2588.915	U	5	2	-	-
2594.273	Pd II	-	25 wh	-	-	2591.640	Ru	30	1	-	-	2588.885	Ce	3	-	-	-
2594.247	Ta	5	5	-	-	2591.588	Re	30	-	-	-	2588.862	Ru	-	3	-	-
2594.18	Yb	1	5	Me	-	2591.543	Fe II	50	100	-	-	2588.795	Fe II	1	20	-	-
2594.158	Co I	10 w	-	-	-	2591.51	Dy	5	-	Ed	-	2588.783	Mo	10	30	-	-
2594.150	Fe I	20	2	-	-	2591.49	W II	12	7	-	-	2588.683	I II	-	[40]	Ke	-
2594.143	Os	10	3	-	-	2591.430	Re	15	-	-	-	2588.655	Ru	-	3	-	-
2594.039	Br I	12 h	4	-	-	2591.424	Mn	2	12	-	-	2588.65	Yb	-	8 h	Me	-
2594.038	Fe	20	2	-	-	2591.41	Se	-	[150]	Bl	-	2588.59	Tb	-	10	Ex	-
2594.005	Mo	15	-	-	-	2591.35	Te	-	[30]	Bl	-	2588.554	W	-	8	-	-
2593.927	Na I	15 R	-	-	Fl	2591.326	Hf II	10	12	-	-	2588.533	Ta	5	-	-	-
2593.828	Na I	20 R	-	-	Fl	2591.256	Fe	20	-	-	-	2588.51	Cd	-	[4]	Vs	-
2593.82	U	1 h	4	-	-	2591.252	U	18	12	-	-	2588.426	Ce	3	-	-	-
2593.802	Ce	2	-	-	-	2591.237	Ru	-	50	-	-	2588.362	Cb	2	-	-	-
2593.764	Cb	2 h	100	-	-	2591.229	Mn	-	12	-	-	2588.314	Ni II	-	80	-	-
2593.76	Br	-	[20]	Bl	-	2591.17	Cs	-	[20]	Bs	-	2588.28	Mg I	8	8	-	-
2593.729	Mn II	200 R	1000 R	-	-	2591.15	Ne I	-	[3]	Ps	-	2588.27	Tm	40	80	Me	-
2593.726	Fe II	15	70	-	-	2591.138	Re	15	-	-	-	2588.26	Gd	1	2	-	-
2593.71	Si	-	[2]	Sy	-	2591.118	Ru	50	-	-	-	2588.25	Br	-	[3]	Bl	-
2593.705	Mo	20	40	-	-	2591.04	Yb	1	5	-	-	2588.203	Cr I	8	1	-	-
2593.700	Ru	20	-	-	-	2591.040	Ir	2	4	-	-	2588.195	Ru	10	-	-	-
2593.660	Ta	80 d	100	-	-	2591.02	I	-	[20]	Bl	-	2588.191	Fe	-	2	-	-
2593.642	Ti I	20	2	-	-	2591.013	Pt II	-	10	Sh	-	2588.093	W	-	12	-	-
2593.636	Ru	10	-	-	-	2590.971	Ru	12	100	-	-	2588.0	bh B	50	-	L	-
2593.618	Rh	-	15	-	-	2590.944	Cb	15	800	-	-	2587.999	Fe	40	-	-	-
2593.571	U	18	6	-	-	2590.943	Ta	5	-	-	-	2587.957	Cb	3	20	-	-
2593.518	Fe	25	-	-	-	2590.91	N II	-	[25]	Fl	-	2587.948	Fe II	-	50	-	-
2593.466	I II	-	[150]	Ke	-	2590.81	Er	-	2	-	-	2587.883	Ce	2	-	-	-
2593.41	Hg I	5	3	Dj	-	2590.805	Ce	2	-	-	-	2587.86	Ru	-	8	Ex	-
2593.382	W	12	4	-	-	2590.791	U	3	2	-	-	2587.79	Hg	-	[2]	Dj	-
2593.378	Mo	3	20	-	-	2590.755	Os	75	8 l	-	-	2587.790	Pt	10	-	-	-
2593.34	Br	-	[2]	Bl	-	2590.74	Kr II	-	[2 h]	Me	-	2587.76	Pr	-	15 l	-	-
2593.281	Mn	-	2	-	-	2590.729	Cr	1	12	-	-	2587.758	W	12	2	-	-
2593.269	Pd I	3	100	-	-	2590.691	Mn	-	2	-	-	2587.593	Mn	-	5	-	-
2593.182	Mg I	5	2	-	-	2590.67	Ne I	-	[10]	Ps	-	2587.493	Mn	-	5	-	-
2593.134	Ir	3	-	-	-	2590.594	Co I	75 W	-	-	-	2587.486	Os	8	2	-	-
2593.085	Ta	150	1	-	-	2590.545	Fe II	2	35	-	-	2587.458	Ru	6	-	-	-
2593.052	V	-	50 h	-	-	2590.526	Cu II	1 h	250	IBu	-	2587.426	Ir I	2	-	-	-
2593.04	Sn	-	5 wh	Ar	-	2590.492	Ta	5 h	-	-	-	2587.405	Cr	-	2	-	-
2592.944	Mn	150	3	-	-	2590.44	U	4	2 h	-	-	2587.404	Cb	-	30	-	-
2592.882	Co II	-	2	-	-	2590.39	Pr	-	5	-	-	2587.358	Er	4	-	-	-
2592.87	La II	-	3 h	Me	-	2590.34	Ca	-	2	Ad	-	2587.320	W	9	8	-	-
2592.868	Re	50 w	-	-	-	2590.34	Br	-	[3]	Bl	-	2587.31	Mo	1 h	30 wh	-	-
2592.801	Ce	2	-	-	-	2590.256	Ti I	30	1	-	-	2587.289	Pd II	-	15 h	-	-
2592.792	Mo	3	15	-	-	2590.238	Sb	-	3 h	Sp	-	2587.287	Rh	2	100	-	-
2592.779	Fe	20	100	-	-	2590.2	Cs	-	[2]	Bs	-	2587.277	Mn	-	12	-	-
2592.71	Yb	-	3	Me	-	2590.199	Ir I	2	-	-	-	2587.26	Ag II	1 h	[3]	-	-
2592.627	Cu I	1000	50	IBu	-	2590.18	U	2	2	-	-	2587.246	Ni II	-	50	-	-
2592.60	Br	-	[2]	Bl	-	2590.143	Mn	-	5	-	-	2587.221	Co II	10 w	100 h	-	-
2592.594	W	-	4	-	-	2590.04	Au I, II	30	50	-	-	2587.160	Fe	6	-	-	-
2592.581	Er	10	1	-	-	2590.03	Lu	-	3	Me	-	2587.137	Re	40 w	-	-	-
2592.572	U	12	6	-	-	2590.03	Fe	2	-	-	-	2587.10	S	-	[8]	Bl	-
2592.56	Dy	3	-	-	-	2590.017	Mn	-	3	-	-	2587.09	Ca	-	3	Ad	-
2592.537	Ge	20	15	-	-	2589.811	Ta	8	25	-	-	2587.072	U	6	15 h	-	-
2592.53	Ta	5	-	-	-	2589.79	Hg	-	[5 d]	Dj	-	2587.045	Er	10	1	-	-
2592.48	Kr II	-	[60]	Me	-	2589.785	Ru	8	5	-	-	2587.04	Mo	-	10	-	-
2592.464	W	2	5	-	-	2589.708	Mn	10	50 h	-	-	2586.998	Re	20	-	-	-
2592.440	Ta	12 h	-	-	-	2589.695	Cr	-	8	-	-	2586.95	Al II	-	[50]	Sy	-
2592.393	Zr I	5	-	-	-	2589.654	W	2 d	12	-	-	2586.941	W	75	30	-	-
2592.34	Lu	-	5 h	Me	-	2589.653	Zr I	12	-	-	-	2586.93	Br	-	[10]	Bl	-
2592.338	Ce	10	-	-	-	2589.593	U	10	4	-	-	2586.91	Rb	-	[5]	Ok	-
2592.298	Mn	12	2	-	-	2589.566	Ru	60	3	-	-	2586.910	Cb	1	10	-	-
2592.292	Fe	12	-	-	-	2589.559	Ce	2	-	-	-	2586.857	Zr II	5	8	-	-
2592.208	V	-	10	-	-	2589.507	Os	5	1	-	-	2586.788	Re	100	-	-	-
2592.198	Cb	20	3	-	-	2589.5	In	-	2	Cx	-	2586.734	I II	-	[40]	Ke	-
2592.192	Zr I	6	-	-	-	2589.413	Ru	-	60	-	-	2586.733	W	-	6	-	-
2592.160	Rh	-	80	-	-	2589.391	Os	8	2	-	-	2586.72	Se	-	[5]	Bl	-
2592.14	Cd I	30	-	Fl	-	2589.381	Ir I	5	-	-	-	2586.640	W	10	6	-	-
2592.09	Pd II	-	[5 h]	Bx	-	2589.3	Cs	-	[2]	Bs	-	2586.61	Ra II	-	[50]	Rs	-
2592.09	Au	-	10	-	-	2589.267	Cb	3	2	-	-	2586.586	W II	1	3	-	-
2592.056	Ir I	100	20	-	-	2589.188	Ge I	6	6	-	-	2586.567	Mn	-	10	-	-
2592.032	Cb	2	4	-	-	2589.167	W II	15 d	25	-	-	2586.562	Ce	2	-	-	-
2592.029	Mn	-	8	-	-	2589.118	Ir	2	-	-	-	2586.56	Pd II	-	2	-	-
2592.024	Ru	60	6	-	-	2589.10	Br	-	[6]	Bl	-	2586.44	Se	-	[15]	Bl	-
2591.975	Mo	40	1	-	-	2589.08	Kr	-	[30]	Me	-	2586.43	Cd	-	[5]	Vs	-
2591.970	W	-	6	-	-	2589.071	Zr II	5	10	-	-	2586.40	Zr II	-	2	-	-
2591.96	C II	-	4 h	En	-	2589.063	Th	20	10	-	-	2586.37	La II	-	10	-	-
2591.905	Er	1	3	-	-	2589.057	Ce	5	-	-	-	2586.344	W	8	12	-	-
2591.848	Cr I	100 r	12	-	-	2589.053	Cr	-	2	-	-	2586.331	Ru	6	-	-	-
2591.845	Ir I	3	-	-	-	2589.038	Ru	20	-	-	-	2586.312	Na II	-	[5]	Fr	-
2591.83	Tb	-	20	Ex	-	2588.965	Cb	1	20	-	-	2586.29	Yb	1	4	-	-

2586.2—2578.3 A.

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R		Arc	Spk., [Dis.]	R
2586.279	Ti I	7	-	-	2583.177	Ir I	6	-	2580.60	Eu	25 w	-
2586.201	U	6	6	-	2583.176	Co	-	40 w	2580.584	Ta	2	5 h
2586.153	Th	5	2	-	2583.156	Pt II	-	10	2580.488	W	12	7
2586.13	Gd	2	-	-	2583.128	Ce	5	-	2580.457	Fe I	8	-
2586.096	Cb	-	40 wh	-	2583.108	Cb	8	2	2580.451	Zr	4	-
2586.084	Ru	12	-	-	2583.092	Mn	5	1	2580.444	Ru	-	8
2586.04	Te	-	[15]	Bl	2583.048	Fe II	-	3	2580.360	Th	5	2
2585.959	W II	8	20	-	2583.037	Ru	30	40	2580.35	Si	-	[2]
2585.948	Mo	15	30	-	2583.029	Pd II	-	6	2580.332	W	10	5
2585.889	Mn II	4	6 h	Cz	2583.018	Cr	10	-	2580.326	Co II	15 w	100 wh
2585.876	Fe II	70	100	I	2583.010	V	-	50	2580.314	Re	20	-
2585.8	In	-	2	Cx	2582.99	O	-	[5]	2580.30	Cd I	50	[5]
2585.735	Ru	50	-	-	2582.965	Mn	-	50	2580.30	Fe	6	1
2585.647	Ru	10	-	-	2582.960	La II	-	8	2580.285	Cb	2	100
2585.620	Fe II	-	3	-	2582.923	Hf	1	2 h	2580.205	Ru	-	9
2585.607	Ta	30	-	-	2582.92	Fe	3	-	2580.183	Mn	10	-
2585.603	Cr	-	2	-	2582.88	C I	-	[4]	2580.156	Ta	150	-
2585.59	Ti I	30 R	2	Fl	2582.83	Rh	2	10	2580.14	Ti I	100 R	80 R
2585.57	Mg I	5	-	-	2582.825	W	-	8	2580.13	Pr	-	2 wh
2585.483	Mn	-	10 wh	-	2582.818	Ru	3	20	2580.12	Kr	-	[2]
2585.434	W	8	2	-	2582.816	Fe	5	-	2580.10	Tb	-	10
2585.341	Ru	20	-	-	2582.808	I II	-	[400]	2580.07	Hg II	-	[3]
2585.336	Co I	50 W	-	-	2582.793	Ce	3	-	2580.064	Hf	-	2
2585.32	Dy	4	-	-	2582.772	Re	15	-	2580.064	Fe I	10	-
2585.30	Xe	-	[2]	Hu	2582.627	Ru	4	9	2580.048	W	9	1
2585.25	S	-	[10]	Bl	2582.590	Ce	2	-	2580.026	Os	15	100 w
2585.25	Se	-	[15]	Bl	2582.585	Fe II	25	80	2579.97	Dy	3	-
2585.222	W	9	3	-	2582.56	La II	-	6	2579.9	Rn	-	[7]
2585.215	U	6	2	-	2582.54	Hf II	25	35	2579.845	Fe	10	1
2585.187	Ce	2	-	-	2582.522	W	-	12	2579.759	Ir I	3	-
2585.07	Cd I	3	[1]	m	2582.5	Ca	-	[2]	2579.670	Mn	125	1
2585.00	Fe	3	-	-	2582.487	Zn I	300	40	2579.619	Ta	80	-
2584.96	Br	-	[4]	Bl	2582.440	Zn I	100	-	2579.611	Er	6	5 h
2584.956	V	2	100	-	2582.37	Co II	-	3	2579.58	Yb	5	200
2584.904	Cr	-	2	-	2582.299	Fe	50	-	2579.572	U	8	4
2584.901	Ta	2	-	-	2582.292	Mo	10	-	2579.550	Zr	25	-
2584.898	U	10	4	-	2582.241	Co II	50 w	500 wh	2579.541	W II	8	25
2584.843	I II	-	[2]	Mu	2582.20	Br	-	[3]	2579.533	Ru	30	4
2584.778	Ir I	2	-	-	2582.157	Mo	25	3	2579.488	Ir	-	15 h
2584.768	Re	25	-	-	2582.145	Bi	35	5	2579.442	Mo	10	20
2584.765	I II	-	[20]	Mu	2582.13	Lu	3	20	2579.437	U	6	1
2584.74	Hg	-	5 h	Dj	2582.118	Cr	-	3	2579.437	Th	10	6
2584.72	Fe	3	-	-	2581.958	Os	80 s	5	2579.428	Ca	2	-
2584.691	Ta	40	-	-	2581.910	Ru	30	2	2579.414	Fe II	1	10
2584.656	Cr	10	1	-	2581.86	Eu	3	1	2579.400	W	10 s	-
2584.61	Tb	3	3	m	2581.843	V	-	12	2579.388	Mn	-	5
2584.6	In	-	2	Cx	2581.741	U	5 h	2	2579.272	Fe I	12	6 h
2584.536	Fe I	100	30	S	2581.74	Kr	-	[5 wh]	2579.258	W	2	20
2584.533	Mn	12	12	-	2581.716	Ti II	4	30	2579.24	Te	-	[50]
2584.5	Ti	-	2	Cx	2581.71	Zr II	-	3	2579.217	Ru	30	1
2584.420	U	12	8	-	2581.692	Rh	1	150	2579.157	U	8	2
2584.379	W	15	10	-	2581.649	Mn	-	15	2579.155	Cr I	12	3
2584.308	Mn	150 w	15	-	2581.603	Ta	2	3 h	2579.08	Sn II	-	[2]
2584.303	Fe	2	-	-	2581.60	I	-	[20]	2579.052	Hf	-	3 h
2584.30	Mg I	8	8	-	2581.582	Er	8	2	2579.047	Ta	3 h	100 h
2584.29	S	-	[15]	Bl	2581.498	W	8	-	2579.021	Re	30 R	-
2584.230	W	5	6	-	2581.463	Fe	12	-	2579.017	Ru	12	80
2584.203	Ce	5	-	-	2581.430	Ru	-	8	2578.98	Kr II	-	[2]
2584.19	Ag II	-	3 wh	-	2581.425	Re	25	-	2578.95	Br	-	[4]
2584.18	Mo	-	5	-	2581.411	Ir I	2	-	2578.949	Ru	20	-
2584.15	Kr II	-	[3 h]	Me	2581.200	W II	7	20	2578.926	Co I	30	-
2584.138	Ru	50	3	-	2581.195	Cb	4	2	2578.911	Ir I	12	2
2584.132	Pd II	-	75	-	2581.137	Ru	60	2	2578.91	Hg I	-	[2]
2584.110	Mn	15	5 w	-	2581.12	Yb	20	100	2578.910	Mn	-	25 wh
2584.10	Br	-	[2]	Bl	2581.113	Fe	1	25	2578.909	Mo	2	60
2584.098	Cr	1	25	-	2581.084	Pt II	-	5	2578.9	In	-	3
2584.027	Ta	80 w	200	-	2581.07	U	-	12 h	2578.886	Ti I	4	-
2583.995	Ni II	-	200	-	2581.061	W	12	4	2578.86	S	-	[8]
2583.99	Zr	4	3	-	2581.052	Os	25	-	2578.821	Fe	3 h	5
2583.986	Cb	10	800 wh	-	2581.05	Te	-	[15]	2578.794	Er	-	5
2583.849	Pd II	-	200	-	2581.02	S	-	[8]	2578.79	Lu	40	125
2583.746	Fe	250	-	-	2580.96	Fe	5	-	2578.766	Mo	25	1
2583.73	Yb	-	2	-	2580.955	Co II	-	4	2578.738	Cb	20	10
2583.660	W	6	1	-	2580.907	Ir	2	4	2578.712	Ir I	5	1
2583.655	Zr I	15	-	-	2580.837	Co I	50 W	4	2578.695	W	3	5
2583.65	Gd	-	3	-	2580.823	La II	-	8 hl	2578.567	Ru	30	9
2583.626	Cr	-	2	-	2580.817	Ti	30	-	2578.470	Ni I	20	-
2583.514	W II	-	9	-	2580.8	In	-	2	2578.455	V	-	15
2583.480	U	10	4	-	2580.799	Ru	50	3	2578.44	Hg I	5 wh	[2]
2583.405	Zr II	10	15	-	2580.742	Ag II	1	150 wh	2578.398	Pt II	2	20
2583.39	Th	-	10 h	-	2580.714	Fe II	-	10	2578.371	Ta	3	-
2583.277	Mn	15	-	-	2580.700	Th	8	4	2578.356	Mo	1	25
2583.225	Ti I	5	1	-	2580.69	Cl	-	[15]	2578.354	Mn	-	10 h
2583.220	Cb	5	2	-	2580.64	Ag	-	2	2578.323	U	-	4
2583.215	W	12	9	-	2580.62	I	-	[20]	2578.321	Os	10	10

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2578.264	Cr	10	5	-	-	2575.06	Zn I	5wh	-	-	-	2572.5	Rn	-	-	[12]	Pe
2578.243	Ta	3h	30h	-	-	2575.02	Pr	-	3	-	-	2572.442	W	10	2	-	-
2578.197	Cb	4	2	-	-	2575.01	Tm	-	20	-	Me	2572.440	Ir I	2	2	-	-
2578.17	Br	-	[5]	-	Bl	2574.91	Mg I	8	-	-	-	2572.428	Mn	-	10	-	-
2578.164	Os	8	1	-	-	2574.89	Fe	3	-	-	-	2572.409	Ru I	30	1	-	-
2578.143	Hf II	25	30	-	-	2574.889	Hf	10	20	-	-	2572.367	Ir I	8	-	-	-
2578.02	Fe	2	-	-	-	2574.862	Co	3	40	-	-	2572.352	W II	3	10	-	-
2577.971	W	3	1	-	-	2574.86	Hg	-	[25]	-	Ps	2572.341	U	1	12h	-	-
2577.970	Ta	10	-	-	-	2574.86	C II	-	2h	-	Fl	2572.341	Mo	60h	10	-	-
2577.950	Mn	-	5	-	-	2574.843	Cb	2	100	-	-	2572.325	Mg I	8	-	-	-
2577.923	Fe II	30	100	-	-	2574.80	Yb	1	3	-	-	2572.279	Ru	30	1	-	-
2577.921	La II	-	2	-	-	2574.764	Eu	2	1	-	-	2572.25	Mo	-	15	-	-
2577.84	Br	-	[5]	-	Bl	2574.681	W	5	-	-	-	2572.237	Co I	50w	12	-	-
2577.780	Ta	90	1	-	-	2574.673	U	5	2	-	-	2572.235	W II	2	12	-	-
2577.696	W	8	1	-	-	2574.657	Rh	5	5	-	-	2572.15	Hg	-	[20]	-	Ps
2577.67	Yb	2	30	-	-	2574.59	Cs	-	[2]	-	Bs	2572.146	Cr I	5	3	-	-
2577.651	Cr I	35	3	-	-	2574.55	Ne I	-	[8]	-	Ps	2572.14	Fe	2	-	-	-
2577.57	Te	-	[25]	-	Bl	2574.55	Tm	1	25	-	Me	2572.102	Cb	6	3	-	-
2577.56	Eu	5W	-	-	-	2574.525	Ru	-	5	-	-	2572.09	Yb	-	3	-	-
2577.529	Ir I	3	-	-	-	2574.522	V II	9	80	-	-	2572.069	Ir I	10	4	-	-
2577.468	Mn	12	-	-	-	2574.512	In II	-	[5]	-	Ps	2572.03	Kr	-	[10h]	-	Me
2577.427	Fe II	-	2	-	-	2574.490	Pt I	15	5h	-	-	2571.930	Ce	5	-	-	-
2577.37	Ta	80d	150d	-	-	2574.484	Th	10	5	-	-	2571.892	Mn	-	12	-	-
2577.320	U	18	6	-	-	2574.424	Mo	15	20	-	-	2571.83	Pr	-	4	-	-
2577.305	W II	-	4	-	-	2574.379	Ta	80	-	-	-	2571.82	Re	5w	-	-	-
2577.300	Ru	-	5	-	-	2574.372	In II	-	[10]	-	Ps	2571.782	Os	25	5	-	-
2577.293	Fe	3	-	-	-	2574.368	Fe II	50	150	-	-	2571.78	Tb	-	40	-	Ex
2577.292	V I	20	7	-	-	2574.350	Co I	2	6r	-	-	2571.75	Hg I	3	-	[1]	Dj
2577.265	Ir I	60	15	-	-	2574.291	Hf	6	2h	-	-	2571.742	Cu II	-	150	-	IBu
2577.263	Pb	100wh	40	-	-	2574.25	Kr	-	[25]	-	Me	2571.741	Cr I	50r	35	-	-
2577.21	As	-	3	-	Ro	2574.215	Re	15	-	-	-	2571.670	Hf II	30	80	-	-
2577.153	Eu	20	20	-	-	2574.200	W	3	6s	-	-	2571.620	W	2	12	-	-
2577.13	Si I	10	-	-	Ks	2574.113	Sb	30	40	-	-	2571.612	Th	-	25	-	-
2577.097	Pd II	3	150	-	-	2574.073	Cb	2	10	-	-	2571.592	Sn	100	125	-	-
2577.025	W	15	4	-	-	2574.063	Ru	-	18	-	-	2571.56	Sb	-	8wh	-	Sp
2576.97	Xe II	-	[8]	-	Hu	2574.020	V I	60	50	-	-	2571.548	Fe II	-	15	-	-
2576.954	Ru	12	8	-	-	2573.953	W II	10	4	-	-	2571.49	U	-	4h	-	-
2576.865	Fe II	2	70	-	-	2573.934	Ti II	1	2h	-	-	2571.476	O II	-	[30]	-	Fl
2576.865	W	-	15	-	-	2573.910	Cb	-	4h	-	-	2571.45	Mo	2	20	-	-
2576.823	Hf II	5	60	-	-	2573.897	Hf II	25	100	-	-	2571.445	W II	15	30	-	-
2576.691	Fe I	40	5	-	-	2573.812	W II	2	9	-	-	2571.41	Cs	-	[2]	-	Bs
2576.690	Th	15	5	-	-	2573.793	Ta	100	1	-	-	2571.391	Zr II	300R	400R	-	-
2576.597	Cb	3	2	-	-	2573.774	Re	60	-	-	-	2571.361	Ce	3	-	-	-
2576.563	Mo	2	25	-	-	2573.77	Fe	2	2h	-	-	2571.35	Yb	6	20	-	-
2576.55	Pb II	-	[100]	-	Gs	2573.742	Fe II	2	3	-	-	2571.326	Cb	4	100	-	-
2576.480	V	1	50	-	-	2573.715	Ti II	2	10	-	-	2571.258	Re	25	-	-	-
2576.428	Ta	-	3h	-	-	2573.61	Gd	-	4	-	-	2571.25	Dy	3	-	-	-
2576.399	Pd II	-	100	-	-	2573.589	W	-	10d	-	-	2571.24	Mo	-	10	-	-
2576.360	W II	2	15	-	-	2573.545	Ru	5	50	-	-	2571.23	Lu	30	100	-	Ma
2576.336	Re	6	3	-	-	2573.544	Ta	125	1	-	-	2571.192	Ta	3	-	-	-
2576.319	Re	15	-	-	-	2573.540	Cr	-	6	-	-	2571.172	W	5	-	-	-
2576.295	Hg I	20	15	-	-	2573.537	Co	30r	12	-	-	2571.13	Hf II	-	3	-	Me
2576.229	Rh	2	2	-	-	2573.534	W	15	-	-	-	2571.10	Cl II	-	[8]	-	Ks
2576.17	Br	-	[15]	-	Bl	2573.49	Fe	3	-	-	-	2571.085	Ru	6	100	-	-
2576.165	W	2	20	-	-	2573.481	La	-	2h	-	-	2571.057	V	4	70	-	-
2576.105	Zr I	8	-	-	-	2573.397	Co	40	12	-	-	2571.054	Cb	3	2	-	-
2576.104	Mn II	300R	2000R	-	-	2573.35	Dy	3	-	-	-	2571.041	U	2	2	-	-
2576.104	Co	30	-	-	-	2573.313	Mo	25	-	-	-	2571.034	Ti II	20	70	-	-
2576.082	Ru	-	50	-	-	2573.25	As	-	5	-	Ro	2570.972	Ru	50	-	-	-
2575.963	Cb	1	10	-	-	2573.250	W	-	4d	-	-	2570.940	Mn	-	80	-	-
2575.933	Ce	6	-	-	-	2573.218	Ir	2	-	-	-	2570.885	Mg I	4	-	-	-
2575.897	W	9	1	-	-	2573.206	Fe II	-	40	-	-	2570.841	Fe II	70	100	-	-
2575.803	Cr	-	4	-	-	2573.201	U	2	2	-	-	2570.803	Er	-	1h	-	-
2575.75	Rh I	2	4	-	-	2573.146	W	6	-	-	-	2570.80	Mo	-	25wh	-	Bl
2575.744	Ag	10h	3h	-	-	2573.141	Ce	15	-	-	-	2570.80	Br	-	[5]	-	-
2575.744	Fe	80	10	-	I	2573.14	Te	-	[15]	-	Bl	2570.784	Cb	3	2	-	-
2575.743	Ir I	10	2	-	-	2573.14	Yb	3	10	-	-	2570.78	Si	-	[2]	-	Sy
2575.70	Te	-	[10]	-	Bl	2573.14	Br	-	[5]	-	Bl	2570.721	Zn II	-	10r	-	-
2575.60	Zn	-	[10]	-	Vs	2573.133	Cb	1	20	-	-	2570.712	Hf II	10	12	-	-
2575.56	Co II	-	15	-	-	2573.09	Ca II	3	150	-	-	2570.668	U	6	4	-	-
2575.511	Hf II	-	8	-	-	2573.055	Cs	-	20	-	-	2570.622	Ir I	20	4	-	-
2575.509	Mn	150	1	-	-	2573.017	Cb	2	10	-	-	2570.525	Fe	10	5	-	Rt
2575.490	Pd II	-	100	-	-	2572.966	Fe	1	15	-	-	2570.46	A	-	[5]	-	-
2575.481	Ir I	3	2	-	-	2572.96	Hf II	5	3	-	-	2570.302	U	6	2h	-	-
2575.473	Ta	80	-	-	-	2572.94	U	3	4h	-	-	2570.3	In	-	2	-	Cx
2575.47	I	-	[20]	-	Bl	2572.8	In I	-	2	-	Cx	2570.267	V	2	2	-	-
2575.465	W	10	1	-	-	2572.768	Mn	200	50	-	-	2570.212	W	-	2h	-	-
2575.422	U	6	2	-	-	2572.701	Ir I	25	5	-	-	2570.111	Rh I	4	2	-	-
2575.411	Al	30	30	-	-	2572.660	Ru	-	8	-	-	2570.092	W	12	2	-	-
2575.354	Ag	2h	1	-	-	2572.651	Ti	10	40	-	-	2570.088	Mn	-	10	-	-
2575.344	Fe	3	-	-	-	2572.647	U	-	15h	-	-	2570.086	Ru	10	-	-	-
2575.300	O II	-	[100]	-	Fl	2572.643	Pd II	-	2h	-	-	2570.01	A II	-	-	-	Rt
2575.242	Ru	30	1	-	-	2572.618	Pt II	15	50	-	-	2569.979	W	-	12	-	-
2575.225	U	6	2	-	-	2572.578	W	-	8	-	-	2569.879	Ce	-	-	-	-
2575.100	Al	200R	80R	-	-	2572.52	Dy	3	-	-	-	2569.877	Ir I	20	3	-	-

2569.8—2562.2 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2569.871	Zn I	100 h	5	IHz	2567.346	Co I	50 r	-	-	2564.84	Cl II	-	[20]	Ks
2569.8	K	-	[2]	MI	2567.326	Fe	2	-	-	2564.83	Mg I	6	-	-
2569.764	Fe II	-	60	-	2567.30	Br	-	[5]	BI	2564.827	Ir I	2	-	-
2569.743	Fe I	10	12	-	2567.20	Pd II	-	[2 h]	Bx	2564.82	Si I	3	-	Ks
2569.740	Co	-	30	-	2567.16	Ag II	-	15 wh	-	2564.816	V I	35	7	-
2569.736	Ru I	20	-	-	2567.108	U	6	4	-	2564.809	Ru	-	4 wh	-
2569.712	U	12	8	-	2567.075	Zr II	15	8	-	2564.769	Mo	10	1 h	-
2569.660	Ir	3	-	-	2567.050	Mo	40 h	3	-	2564.732	Cb	2	5 h	-
2569.656	Ru	3	2	-	2567.04	Ba	-	2	Py	2564.725	In II	-	[10]	Ps
2569.601	Fe I	20	1	-	2566.92	Rh	-	10	-	2564.706	Fe	3	-	-
2569.554	Pd II	20	150	-	2566.912	Ir	4	-	-	2564.685	W	12	3	-
2569.5	bh C	12	-	-	2566.912	Fe II	60	150	-	2564.58	Te	-	[150]	BI
2569.469	Sr I	25 R	5	ISn	2566.871	Cr	-	2	-	2564.577	Ru	50	2	-
2569.361	Fe	3	-	-	2566.82	Yb	-	3	-	2564.558	Ir I	3	-	-
2569.35	Tm	6	4	Me	2566.785	Mn	2	-	-	2564.548	Fe I	15	-	-
2569.323	Mn	-	10	-	2566.752	Ir I	2	-	-	2564.51	Gd	-	5	Ex
2569.293	Fe	3	-	-	2566.662	U	4	2	-	2564.507	Pd II	-	10 wh	-
2569.253	W II	15	25	-	2566.63	Hf	-	3 h	-	2564.45	Zn II	-	[25]	Vs
2569.25	A	-	[2]	Rt	2566.619	Fe II	3	15	-	2564.45	A II	-	[10]	Rt
2569.23	Pr	-	12 h	-	2566.603	V	-	20	-	2564.437	W	1	4	-
2569.23	Br	-	[15]	BI	2566.589	Ce	5	-	-	2564.424	U	6	2	-
2569.185	Cb	1	5	-	2566.589	Th	15 s	10 h	-	2564.42	Ag II	-	15 wh	m
2569.168	Ce	8	-	-	2566.587	Ru	30	25	-	2564.417	Ru	8	-	-
2569.126	Ta	40	40 h	-	2566.553	Cr I	10	3	-	2564.401	I II	-	[70]	Ke
2569.07	Rh	3	125	-	2566.53	I	-	[10]	BI	2564.369	Os	8	1	-
2569.032	Cb	10	3	-	2566.52	Br	-	[4]	BI	2564.356	Th	-	20 wh	-
2568.980	W	10	-	-	2566.490	Os	25	4	-	2564.341	V	4	-	-
2568.980	U	6	2	-	2566.406	Fe	1	15	-	2564.338	Mo	3	40	-
2568.971	Ti II	3	12	-	2566.40	B II	-	2	Sy	2564.31	Tb	-	10	Ex
2568.882	Fe II	-	25	-	2566.374	Ce	2	-	-	2564.295	Zr I	4	-	-
2568.878	Ru	-	35	-	2566.347	Ir I	2	-	-	2564.228	V I	20 h	2	-
2568.873	Zr II	100	200	-	2566.331	Ta	6	-	-	2564.188	Re	50	-	-
2568.866	U	5	4	-	2566.315	W	-	12	-	2564.182	Eu	20	60	-
2568.865	Fe I	20	10	-	2566.29	Fe	3	10	-	2564.177	Ir I	40	8	-
2568.852	W	2	15	-	2566.27	Dy	6	-	-	2564.13	Cl II	-	[6]	Ks
2568.834	Os	25 I	10 I	-	2566.26	B II	-	15	Sy	2564.120	Mn	-	8	-
2568.83	Rh	2	100	-	2566.259	Mo	10	20	-	2564.069	Cb	1	30	-
2568.767	Ru I	60	8	-	2566.258	I II	-	[300]	Ke	2564.036	Co II	15 w	100 wh	-
2568.718	Mn	-	15	-	2566.234	Ru	-	50	-	2564.02	Cd	-	[2]	Vs
2568.71	Cs	-	[8]	Bs	2566.214	Fe	2	40	-	2563.918	Cb	2	10	-
2568.705	Ce	2	-	-	2566.098	W	4	-	-	2563.906	W	7	15	-
2568.676	Cb	1	4	-	2566.081	Ni II	-	600 h	-	2563.90	Hg I	-	3	Dj
2568.644	Re	30 w	-	-	2566.078	La II	-	10 h	-	2563.893	Ru	-	35	-
2568.64	Si I	15	10	-	2566.072	Cb	2	30	-	2563.861	Ta	-	3 h	-
2568.587	Pt II	1	40	-	2566.043	Rh I	5	4	-	2563.86	Tm	15	4	Me
2568.557	W	12	2	-	2566.033	V	1	12	-	2563.834	Fe I, II	2	10	-
2568.548	Eu	6	1	-	2566.01	Gd	-	3	-	2563.703	Ta	80	-	-
2568.526	Cr I	5	2	-	2565.98	Tm	5	2	Me	2563.67	Si I	4	-	Ks
2568.519	Mn	-	12	-	2565.953	Mn	15 h	10	-	2563.648	Mn	25	50 wh	-
2568.43	Pb	-	10	-	2565.907	U	-	4	-	2563.606	Hf II	20	35	-
2568.407	Cb	2	20	-	2565.88	Cd I	3	[10]	FI	2563.581	Cr	1	15	-
2568.400	Fe II	-	80	-	2565.843	Re	15	-	-	2563.56	Zr I	12	-	-
2568.389	V	35	30 h	-	2565.808	Ru	12	5	-	2563.52	Lu	1	80 h	Me
2568.315	Ir	3	-	-	2565.789	W	3	8	-	2563.474	Fe II	70	125	-
2568.308	Mn	-	10	-	2565.787	Rh I	5	4	-	2563.430	Cr II	-	5	HI
2568.26	Tm	5	1	Me	2565.778	Ta	3	-	-	2563.402	Fe	5	25 h	-
2568.210	W	12	10	-	2565.71	Au	-	12	-	2563.36	Cr	-	10 d	-
2568.174	Eu	15	15	-	2565.708	Fe	4	-	-	2563.334	Ta	50	-	-
2568.13	Te	-	[15]	BI	2565.702	Ru	4	50	-	2563.329	Na	-	[2]	Fr
2568.108	W	-	10	-	2565.68	Al II	-	[30]	Sy	2563.284	Ir I	15	3	-
2568.100	Cr I	8	-	-	2565.676	Cb	1	10	-	2563.246	Mn	-	5	-
2568.08	Zn II	50 h	10	Vs	2565.597	Th	10	15	-	2563.19	Br	-	[2]	BI
2568.059	V	-	10	-	2565.590	Ce	8	-	-	2563.183	Sc II	10	20	-
2568.03	Pd II	-	15 wh	-	2565.58	Yb	5	15	-	2563.164	Os	8	25	-
2567.99	Mo	10 h	2 h	-	2565.546	V	-	25	-	2563.162	W	8	30	-
2567.987	Al	200 R	80 R	-	2565.54	Sb	-	25 W	m	2563.151	Ru	50	1	-
2567.955	U	6	2	-	2565.507	Pd II	2	200	-	2563.095	Fe	6	-	-
2567.915	W	-	8	-	2565.502	Cb	2	12	-	2563.009	Re	30	-	-
2567.895	Ru	30	-	-	2565.48	Ca	-	4	Ad	2562.943	U	15	6	-
2567.87	Fe	12	-	-	2565.46	Fe	2	-	-	2562.907	Ag	-	10	-
2567.826	Th	-	20	-	2565.408	Cb	15	10	-	2562.907	Ir	-	10 h	-
2567.805	Fe	6	-	-	2565.406	U	30	-	-	2562.841	U	5	4	-
2567.740	Sb	-	5	-	2565.397	In II	-	[5]	Ps	2562.840	Ru	3	1	-
2567.679	Ce	2	-	-	2565.372	Ni II	-	150 wh	-	2562.761	V	1	25	-
2567.638	Zr II	100	100	-	2565.37	Co	-	20	-	2562.665	Os	12	1	-
2567.63	Yb	5	150	Me	2565.29	Cl II	-	[15]	Ks	2562.65	W	-	8 I	-
2567.607	W II	7	15	-	2565.223	Mn	2	80	-	2562.64	Au II	-	5	-
2567.599	Cr	-	2	-	2565.196	Ta	3 h	-	-	2562.63	Fe	2	-	-
2567.511	Cb	10	5	-	2565.182	Os	50	-	-	2562.61	Zn I	10 h	-	FI
2567.498	W	12	1 h	-	2565.167	Ru	12	1	-	2562.537	Li I	150	15	-
2567.46	Hf	-	20	Me	2565.13	In II	-	[40]	Ps	2562.534	Fe II	50	150	I
2567.451	Zr I	20	-	-	2565.11	Rh	1	30	-	2562.47	I	-	[30]	Ke
2567.447	Ta	2	-	-	2565.11	Nd	5	-	-	2562.424	Ce	5	-	-
2567.444	Cb	-	5 h	-	2564.98	S	-	[8]	BI	2562.406	Cb	4	100	-
2567.44	V	-	40 h	-	2564.843	Cb	1	15	-	2562.28	Pb	-	100	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2562.28	Te	-	[10]	Bl	2559.905	Rh	5	100	-	2557.27	Er	-	2	-
2562.247	Mn	-	10	-	2559.885	Re	15	-	-	2557.265	Fe	1	-	-
2562.229	Fe I	15	-	-	2559.806	Ru	3	8	-	2557.264	Mg I	6	-	-
2562.225	Mg I	3	-	-	2559.80	Cr	-	8	-	2557.25	Yb	2	8	-
2562.173	Ru	5	-	-	2559.768	Fe II	3	30	-	2557.20	Rh	1	100	-
2562.146	Co I	10 r	-	-	2559.755	W	-	5	-	2557.200	Ir	2	-	-
2562.130	V I	50	4	-	2559.718	I II	-	[40]	Mu	2557.153	Cr I	35	2	-
2562.125	Ni	15	-	-	2559.712	Re	15	-	-	2557.129	Ru	5	50	-
2562.12	Tb	-	10	Ex	2559.71	Te	-	[25]	Bl	2557.081	Fe II	-	10	-
2562.12	A II	-	[20]	Rt	2559.694	Mo	-	20	-	2557.008	W	8	5	-
2562.097	Fe II	2	25	-	2559.664	Mn	-	40 d	-	2557.0	bh C	5	-	L
2562.097	Ta	100	-	-	2559.664	Ni	20	-	-	2556.936	Cb	5	200	-
2562.084	U	6	2	-	2559.614	Al II	-	[15]	Sy	2556.93	Br	-	[25]	Bl
2562.081	Mo	1	30	-	2559.587	Ba	-	2 h	-	2556.895	Mn	3	40	-
2561.98	Ir	-	5 d	-	2559.553	Ir I	5	-	-	2556.864	Fe	20	1	-
2561.962	W	12	8	-	2559.494	W	3	15	-	2556.822	V I	2	2	-
2561.960	U	2 h	4 h	-	2559.488	U	10	4	-	2556.78	Al II	-	[15]	Sy
2561.94	Kr II	-	[3 h]	Me	2559.429	Cb	-	8	-	2556.774	Ir I	8	2 h	-
2561.937	Th	10	5	-	2559.427	Ta	100	2	-	2556.758	Co I	50 w	150	-
2561.92	Rb	-	[10]	Ok	2559.412	Mn	2	50	-	2556.753	Mo	2	20	-
2561.92	Rh	-	50	-	2559.407	Co II	10	60 wh	-	2556.743	W	12	3	-
2561.855	Fe I	15	-	-	2559.405	Ru	30	4	-	2556.697	Ru	-	30	-
2561.848	La II	-	20	-	2559.331	W	8	2	-	2556.63	A	-	[5]	Rt
2561.803	Ru	20	-	-	2559.31	A	-	[5]	Rt	2556.61	Tb	-	20	Ex
2561.80	Lu	-	6 h	Me	2559.277	I II	-	[25]	Mu	2556.573	Mn	10	80 h	-
2561.79	Ne I	-	[8]	Ps	2559.247	U	3	10 h	-	2556.57	Fe	2	-	-
2561.782	Ir	2	4 h	-	2559.243	Fe II	-	20	-	2556.511	Re	100	-	-
2561.71	Fe	3	-	-	2559.2	K	-	[5]	MI	2556.510	Ta	25	30	-
2561.703	Cb	2	10	-	2559.20	Si	-	[15]	Sy	2556.45	Ca	-	4	Ad
2561.69	Se	-	[25]	Bl	2559.20	Tb	-	10	Ex	2556.430	Zr I	3 d	-	-
2561.67	Pd	-	[3 h]	Bx	2559.191	Hf II	20	40	-	2556.36	Kr	-	[6]	Me
2561.65	Yb	2	1	-	2559.18	Th	-	5	-	2556.312	Ru	50	-	-
2561.65	Tm	60	30	Me	2559.177	Eu	10	20	-	2556.305	Ge	20	2	-
2561.623	Mo	25	-	-	2559.15	Mo	1	10 h	-	2556.30	Fe	15	1	-
2561.584	U	12	6 h	-	2559.10	Kr II	-	[8 h]	Me	2556.30	Hg I	3	-	Di
2561.550	Mn	-	8	-	2559.079	Re	30	-	-	2556.270	W	10	3	-
2561.514	W	8	1	-	2559.02	Hf	8	-	-	2556.25	Yb	-	3	-
2561.511	Ce	3	-	-	2558.991	La II	-	3	-	2556.194	U	15	12	-
2561.49	I	-	[150]	Bl	2558.940	Cb	12	2	-	2556.10	F II	-	[15]	Di
2561.48	Xe II	-	[2]	Hu	2558.936	Mo	15	-	-	2556.083	W	-	6	-
2561.467	Re	25	-	-	2558.897	V I	10	12	-	2556.077	Os	10	2	-
2561.46	Fe	3	-	-	2558.896	W	2	4	-	2556.049	Ru	-	18	-
2561.44	Pd	-	2 h	-	2558.88	Mo	5 h	30 h	-	2556.022	V I	4	-	-
2561.424	Ni I	40	-	-	2558.857	Mn	-	12	-	2556.01	Al II	-	[30]	Sy
2561.393	Ce	2	-	-	2558.739	Ir I	2	-	-	2555.996	Ru	30	-	-
2561.389	W	-	3	-	2558.622	Cb	1	5	-	2555.987	Ti I	15	80	-
2561.280	Co	25	12 h	-	2558.62	Rh	5	-	-	2555.949	Ce	2	-	-
2561.27	Fe I	4	-	-	2558.593	Ta	3	-	-	2555.91	Kr	-	[6]	Me
2561.18	Hg I	3 h	3	Di	2558.588	Mn	-	80	-	2555.910	V	2	80	-
2561.18	As	-	5	Ro	2558.570	W	-	7	-	2555.884	Ir I	20	4	-
2561.024	Pd II	-	200	-	2558.55	Pr	-	6	-	2555.864	Ru	20	18	-
2560.956	U	5	2	-	2558.545	Ir	2	6 d	-	2555.803	Os	10	2	-
2560.89	Xe	-	[3]	Hu	2558.535	Ru	50	1	-	2555.799	Sc II	10	20	-
2560.88	Se	-	[15]	Bl	2558.483	Fe	10	20	-	2555.73	Fe	5	-	-
2560.86	Mg I	4	-	-	2558.42	Lu	-	6 h	Me	2555.73	Pr	-	4	-
2560.830	Ru	30	5	-	2558.354	Ce	2	-	-	2555.661	Re	15	-	-
2560.760	Mn	-	12	-	2558.345	Ta	-	5 wh	-	2555.654	Ru	12	8	-
2560.748	W	8	4	-	2558.289	Mn	-	12	-	2555.648	Fe I	3	-	-
2560.741	Cb	1	5 h	-	2558.1	Po	-	[20]	Ka	2555.633	Cb	2	80	-
2560.74	Hf	-	25	Me	2558.093	Os	12	2	-	2555.55	Cr	6	3	-
2560.688	Cr I	30	15	-	2558.049	Re	60	-	-	2555.442	Fe II	2	35	-
2560.678	Ta	70	-	-	2558.048	Sn	30	6	-	2555.42	Mo	3	50	-
2560.626	Cb	2	15	-	2558.023	W	-	6	-	2555.360	Rh I	100	60	-
2560.57	Yb	-	5	-	2558.016	Ru	4	10	-	2555.347	Ir I	25	5	-
2560.559	Fe I	15	-	-	2557.960	U	4	2	-	2555.33	Hf	-	2 h	-
2560.539	Ir I	10	2 h	-	2557.958	Zn II	10	300	IHz	2555.319	Cb	1	30	-
2560.494	W	4	-	-	2557.944	Cb	-	100 h	-	2555.31	Yb	-	50 h	Me
2560.374	La II	-	50	-	2557.94	Dy	8	-	Ed	2555.28	Ga II	-	[6]	Sy
2560.37	Cs	-	[8]	Bs	2557.92	Rh	1	50	-	2555.273	Os	10	3	-
2560.300	Ir I	8	2 h	-	2557.870	Ni II	-	80	-	2555.220	Fe	10	-	-
2560.300	Ni II	-	500 h	-	2557.82	Br	-	[4]	Bl	2555.210	U	4	4	-
2560.281	U	6	2	-	2557.768	Os	10	1	-	2555.205	W	10	-	-
2560.272	Fe II	10	80	-	2557.75	Hg	-	[5]	Dj	2555.20	Th	-	15	-
2560.262	Ru	60	5	-	2557.71	Al II	-	[40]	Sy	2555.113	Ni II	-	1000 h	-
2560.228	In I	150 R	50 Rh	-	2557.709	Ta	50	100	-	2555.091	W II	10	15	-
2560.227	Sc II	10	30	-	2557.70	Yb	-	4	Me	2555.066	Fe II	20	20	-
2560.21	Rh I	2 r	-	-	2557.697	Ru I	30	5 wh	-	2555.052	Ta	50	-	-
2560.20	Dy	7	-	-	2557.560	W II	12	6	-	2554.931	Re	15	-	-
2560.147	V	-	10	-	2557.537	Mn	1	50	-	2554.93	P I	60	[20]	Ks
2560.12	Tb	-	10	Ex	2557.52	B	-	6	Sy	2554.907	Ta	50 h	50 h	-
2560.119	W	15	8	-	2557.502	Fe II	1	50	-	2554.862	W II	15	10	-
2560.109	Cb	1	10	-	2557.454	Cr	-	2	-	2554.862	V I	15	2	-
2560.09	Co	1 d	60 wd	-	2557.39	Mo	1	10	-	2554.8	Cs	-	[2]	Bs
2560.02	U	3	2 h	-	2557.346	Co	2	30	-	2554.795	Cb	1	20	-
2559.928	Fe II	2	15	-	2557.28	I II	-	[20]	Bl	2554.785	Eu	10	1	-

2554.7—2547.9 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2554.76	S	-	-	[8]	Bl	2552.28	Pd II	-	-	2 h	-	2550.097	Re	5	-	-	-	2550.097	Re	5	-	-	-
2554.73	Th	-	-	15 d	-	2552.267	V	-	-	4 h	-	2550.095	Ce	2	-	-	-	2550.095	Ce	2	-	-	-
2554.687	Ru	8	-	-	-	2552.261	Ce	2	-	-	-	2550.04	Yb	2	-	-	-	2550.04	Yb	2	-	-	-
2554.668	W	4	-	15	-	2552.250	Pt I	150	-	20	-	2550.035	Cb	1	-	-	-	2550.035	Cb	1	-	-	-
2554.631	Re	5	-	-	-	2552.241	W II	1	-	3	-	2550.027	U	4	-	-	-	2550.027	U	4	-	-	-
2554.622	Ta	50	-	100	-	2552.18	Cd II	5 h	-	[100]	-	2550.02	Co II	-	-	60	-	2550.02	Co II	-	-	60	-
2554.62	Mg I	4	-	-	-	2552.15	Yb	10	-	40	-	2550.02	K II	-	-	[20]	-	2550.02	K II	-	-	[20]	-
2554.617	Sb	30	-	10	-	2552.12	Al II	-	-	[40]	Sy	2550.020	Fe II	15	-	40	-	2550.020	Fe II	15	-	40	-
2554.58	Se	-	-	[15]	Bl	2552.113	W	-	-	7	-	2549.968	V I	10	-	4	-	2549.968	V I	10	-	4	-
2554.520	Fe	2	-	-	-	2552.026	Re	80	-	-	-	2549.904	Cb	4	-	-	-	2549.904	Cb	4	-	-	-
2554.513	Mn	-	-	20	-	2552.014	Cb	-	-	3 h	Me	2549.884	Co II	-	-	10 h	-	2549.884	Co II	-	-	10 h	-
2554.51	Cd I	3	-	[1]	Fl	2552.01	Tb	-	-	10	Ex	2549.85	Cl II	-	-	[50]	-	2549.85	Cl II	-	-	[50]	-
2554.477	In II	-	-	[50]	Pa	2552.0	In	-	-	2	Cx	2549.841	V	4	-	1	-	2549.841	V	4	-	1	-
2554.465	Os	20	-	4	-	2551.984	W	8	-	-	-	2549.84	A II	-	-	[2]	-	2549.84	A II	-	-	[2]	-
2554.399	Ir I	15	-	15 h	-	2551.984	Ru	10	-	150	-	2549.819	Mn	-	-	8	-	2549.819	Mn	-	-	8	-
2554.399	In II	-	-	[50]	Pa	2551.90	Au	-	-	5	-	2549.792	Ru	3	-	100	-	2549.792	Ru	3	-	100	-
2554.31	Zr	20	-	-	-	2551.88	Mn	1	-	100 d	-	2549.774	Fe II	1	-	2	-	2549.774	Fe II	1	-	2	-
2554.220	V	-	-	50 wh	-	2551.848	Pd II	-	-	100 h	-	2549.690	Ir I	5	-	-	-	2549.690	Ir I	5	-	-	-
2554.162	Re	30 R	-	-	-	2551.847	Hf II	3	-	1 h	-	2549.66	Rh	1	-	20	-	2549.66	Rh	1	-	20	-
2554.107	Cb	5	-	2	-	2551.771	Ce	5	-	3 h	-	2549.656	V	-	-	10	-	2549.656	V	-	-	10	-
2554.087	W	6	-	-	-	2551.732	Ta	100	-	4 h	-	2549.613	Fe I	70 R	-	2	-	2549.613	Fe I	70 R	-	2	-
2554.08	Gd	-	-	3 h	-	2551.731	Zr	3	-	-	-	2549.610	Mn	-	-	8	-	2549.610	Mn	-	-	8	-
2553.981	Mn	-	-	10	-	2551.729	V	-	-	25	-	2549.577	Ru	50	-	3	-	2549.577	Ru	50	-	3	-
2553.98	I	-	-	[20]	Bl	2551.726	Ru	30	-	-	-	2549.558	Ni II	-	-	150	-	2549.558	Ni II	-	-	150	-
2553.964	Ru	12	-	-	-	2551.70	Xe II	-	-	[3]	Hu	2549.535	Cr I	25	-	2	-	2549.535	Cr I	25	-	2	-
2553.91	Gd	-	-	4	Ex	2551.67	Hg	-	-	[2]	Dj	2549.53	Sr	5	-	-	-	2549.53	Sr	5	-	-	-
2553.826	Fe	9	-	6	-	2551.63	Gd	-	-	2	-	2549.52	Lu	20 h	-	-	-	2549.52	Lu	20 h	-	-	-
2553.819	W	12	4	-	-	2551.590	Cr	1	-	18	-	2549.515	Th	-	-	15	-	2549.515	Th	-	-	15	-
2553.74	Pd	-	-	[20]	Bx	2551.564	Mn	-	-	5	-	2549.479	Ru	20	-	3	-	2549.479	Ru	20	-	3	-
2553.734	Fe II	-	-	15	-	2551.554	Ru	-	-	12	-	2549.464	Pt I	80	-	10	-	2549.464	Pt I	80	-	10	-
2553.73	U	3	-	2	-	2551.52	Pr	-	-	15 s	-	2549.461	Fe II	1	-	15	-	2549.461	Fe II	1	-	15	-
2553.698	Mo	15	-	-	-	2551.52	Tm	4	-	8	Me	2549.433	Cb	-	-	3 h	-	2549.433	Cb	-	-	3 h	-
2553.669	V	10	-	20	-	2551.45	U	3	-	2	-	2549.395	Fe II	1	-	10	-	2549.395	Fe II	1	-	10	-
2553.598	W	10	-	3	-	2551.450	W II	-	-	12	-	2549.380	Ta	100	-	-	-	2549.380	Ta	100	-	-	-
2553.588	Ce	2	-	-	-	2551.44	Fe	2	-	-	-	2549.327	Mn	-	-	8	-	2549.327	Mn	-	-	8	-
2553.586	Na	-	-	[2]	Fr	2551.43	I	-	-	[40]	Bl	2549.30	Al II	-	-	[6]	-	2549.30	Al II	-	-	[6]	-
2553.56	In II	-	-	[40]	Pa	2551.4	bh B	150	-	-	L	2549.296	U	10	-	6 h	-	2549.296	U	10	-	6 h	-
2553.56	Cd I	25	-	[2]	m	2551.40	Hf II	25 d	-	125 d	-	2549.279	V II	20	-	150	-	2549.279	V II	20	-	150	-
2553.556	Re	5	-	-	-	2551.399	Ir I	20	-	4	-	2549.260	Ce	2	-	-	-	2549.260	Ce	2	-	-	-
2553.50	Fe	2	-	-	-	2551.382	Cb	5	-	100	-	2549.21	Te	-	-	[5]	-	2549.21	Te	-	-	[5]	-
2553.492	Cb	1	-	30	-	2551.347	W	12	-	-	-	2549.19	Se	-	-	[50]	-	2549.19	Se	-	-	[50]	-
2553.456	Ce	2	-	-	-	2551.341	Ta	2	-	-	-	2549.182	Ru	5	-	150	-	2549.182	Ru	5	-	150	-
2553.407	Ag II	2	-	10	-	2551.26	Ga II	-	-	[2]	Sy	2549.175	U	1 h	-	2 h	-	2549.175	U	1 h	-	2 h	-
2553.398	La II	-	-	3 h	-	2551.212	Fe II	-	-	6	-	2549.103	Th	-	-	12	-	2549.103	Th	-	-	12	-
2553.377	Ni I	20	-	-	-	2551.206	Ce	2	-	-	-	2549.092	W II	8	-	12	-	2549.092	W II	8	-	12	-
2553.374	Co I	10 r	-	-	-	2551.192	Rh I	8	-	2	-	2549.081	Fe II	3	-	30	-	2549.081	Fe II	3	-	30	-
2553.344	Ce	3	-	-	-	2551.188	Ta	150	-	-	-	2549.06	Tb	-	-	10	-	2549.06	Tb	-	-	10	-
2553.33	In II	-	-	[5]	Pa	2551.17	Cs	-	-	[2]	Bs	2548.919	Fe II	1	-	3	-	2548.919	Fe II	1	-	3	-
2553.310	Ru	6	-	5	-	2551.164	W	-	-	9	-	2548.889	Ru	25	-	-	-	2548.889	Ru	25	-	-	-
2553.28	P I	80	-	[20]	Ks	2551.096	Mg I	6	-	-	-	2548.832	Os	3	-	15	-	2548.832	Os	3	-	15	-
2553.256	Mn	-	-	50	-	2551.092	Fe	25	-	1	I	2548.799	Ce	10	-	10 h	-	2548.799	Ce	10	-	10 h	-
2553.185	Fe	10	-	20	-	2551.074	Ta	150	-	-	-	2548.744	Mn	8	-	150	-	2548.744	Mn	8	-	150	-
2553.181	Ta	10 h	-	10 h	-	2551.033	Ni II	-	-	80	-	2548.739	Fe	-	-	12	-	2548.739	Fe	-	-	12	-
2553.162	W	12	-	15	-	2550.995	W	10	-	6	-	2548.71	Yb	-	-	4	-	2548.71	Yb	-	-	4	-
2553.062	Cr I	20	-	1	-	2550.989	Pd II	-	-	35	-	2548.692	V II	10	-	80	-	2548.692	V II	10	-	80	-
2553.047	Zr II	2	-	2	-	2550.903	Ir I	2	-	-	-	2548.689	Ru	2	-	4	-	2548.689	Ru	2	-	4	-
2553.024	V	7	-	15	-	2550.851	Mo	30 h	-	3 h	-	2548.683	Ce	20	-	20 h	-	2548.683	Ce	20	-	20 h	-
2553.003	Co I	40 r	-	-	-	2550.814	U	2	-	2 h	-	2548.682	W	-	-	3 h	-	2548.682	W	-	-	3 h	-
2552.99	Cd II	-	-	[10]	Tk	2550.811	Fe	2	-	-	-	2548.633	Cb	2	-	80	-	2548.633	Cb	2	-	80	-
2552.987	Mn	-	-	3	-	2550.80	Yb	-	-	5 h	-	2548.63	Lu	-	-	10 h	-	2548.63	Lu	-	-	10 h	-
2552.98	Ti I	10 R	-	-	Fl	2550.775	Ta	20	-	-	-	2548.593	Cr	-	-	8	-	2548.593	Cr	-	-	8	-
2552.962	V	10	-	30	-	2550.756	Ir	2	-	-	-	2548.586	Fe II	2	-	8	-	2548.586	Fe II	2	-	8	-
2552.91	Cd II	-	-	[10]	Tk	2550.751	Rh	1	-	20	-	2548.567	W	12	-	2 h	-	2548.567	W	12	-	2 h	-
2552.873	Mo	20	-	2	-	2550.75	Mo	-	-	15	-	2548.55	Hg I	4 h	-	2	-	2548.55	Hg I	4 h	-	2	-
2552.87	Ga II	-	-	[5]	Sy	2550.744	Zr II	100	-	50	-	2548.51	Hf II	1	-	2	-	2548.51	Hf II	1	-	2	-
2552.87	Hg	-	-	[25]	Pa	2550.681	Fe II	3	-	30	-	2548.49	Mg I	2	-	-	-	2548.49	Mg I	2	-	-	-
2552.832	Fe I	5	-	1	-	2550.674	Co II	-	-	5 wh	-	2548.486	Ru	3	-	4	-	2548.486	Ru	3	-	4	-
2552.80	Au	-	-	5 h	-	2550.67	Lu	-	-	3	Me	2548.381	W	1	-	10	-	2548.381	W	1	-	10	-
2552.773	Fe	20	-	-	-	2550.656	Pd II	-	-	150	-	2548.336	Co I	20	-	75	-	2548.336	Co I	20	-	75	-
2552.701	Re	20	-	-	-	2550.553	Ta	20	-	-	-	2548.335	Mn	-	-	12	-	2548.335	Mn	-	-	12	-
2552.70	Yb	8	-	30	-	2550.514	Zr I	15	-	-	-	2548.328	U	5	-								

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities			
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
2547.941	Ru	—	10	—	—	2545.339	W	15	—	9	—	2542.792	Mo	10	10	—	—
2547.902	Th	15	10	—	—	2545.33	Hg II	—	—	[8]	Ps	2542.732	Fe II	1	40	—	—
2547.901	Mn	—	3 h	—	—	2545.217	Fe II	4	25	—	—	2542.7	air	—	5	—	—
2547.893	Ce	4	—	—	—	2545.215	Cr	8	—	—	—	2542.671	Mo	20	25	—	—
2547.88	Ca	—	6	Ad	—	2545.204	Sc II	15	20	—	—	2542.66	Tm	7	3	Me	—
2547.838	W II	—	7	—	—	2545.163	Mn	—	25	—	—	2542.648	Mn	—	15	—	—
2547.76	Cl II	—	[12]	Ks	—	2545.13	Dy	5	—	—	—	2542.642	Th	8 s	3	—	—
2547.700	Os	5	2	—	—	2545.10	Th	—	20	—	—	2542.604	W	1	15	—	—
2547.694	Ir I	15	5	—	—	2545.04	Co	3	30	—	—	2542.512	Os	50	8	—	—
2547.672	Ru	5	80	—	—	2544.971	Fe II	2	10	—	—	2542.495	Mn	15	—	—	—
2547.629	U	6	2	—	—	2544.89	Te	—	—	[5]	Bl	2542.44	V	1	20 wh	—	—
2547.625	W	9	2	—	—	2544.886	Re	20	—	—	—	2542.40	La II	—	6	Me	—
2547.571	Mo	15	20	—	—	2544.87	Hg I	3	—	[5]	Di	2542.361	Ce	3	—	—	—
2547.57	Yt	10	—	—	—	2544.84	Cl II	—	—	[15]	Ks	2542.345	Ta	—	2 h	—	—
2547.554	Cr	—	3	—	—	2544.833	Pd II	—	200	—	—	2542.32	Zn I	40 h	—	—	Fl
2547.508	Ru	12	—	—	—	2544.81	W	—	10	—	—	2542.301	Ir I	2	—	—	—
2547.50	Yb	—	3	—	—	2544.803	Cb	5	300	—	—	2542.235	W	7	1	—	—
2547.476	W	9	2	—	—	2544.802	Cu II	—	700 R	IBu	—	2542.230	Ru	—	5	—	—
2547.457	Mn	—	12 wh	—	—	2544.80	Ta	40	—	—	—	2542.229	Ta	10	—	—	—
2547.413	Ni I	20	—	—	—	2544.80	Hf	—	3 h	—	—	2542.156	Rh	1	50	—	—
2547.352	U	4	2	—	—	2544.79	Al	—	—	[5]	Sy	2542.103	Zr II	100	50	—	—
2547.351	Mo	1	20	—	—	2544.739	Re	25	—	—	—	2542.101	Fe	40	8	I	—
2547.330	Fe II	1	35	—	—	2544.72	A	—	—	[40]	Rt	2542.035	Ru	—	12	—	—
2547.270	Er	8	1	—	—	2544.710	Cd I	50	—	[5]	—	2542.016	Ir I	35	10	—	—
2547.25	Hg	—	[2]	Dj	—	2544.708	Fe	100	5	—	—	2541.998	Pd II	—	15 wh	—	—
2547.214	Ta	4	—	—	—	2544.648	U	5	4	—	—	2541.972	Cb	3	1	—	—
2547.205	Ir I	25	5	—	—	2544.62	Tb	—	10	Ex	—	2541.95	Cl	—	[8]	An	—
2547.188	Ni II	—	100	—	—	2544.561	Ir	—	5	—	—	2541.940	Ta	10	—	—	—
2547.187	Ce	2	—	—	—	2544.376	Ce	2	—	—	—	2541.938	Co II	40	300 h	—	—
2547.139	U	4	—	—	—	2544.372	Ta	—	10 h	—	—	2541.917	Ti I	25	2	—	—
2547.136	W	20	10	—	—	2544.358	U	8	2	—	—	2541.913	Th	—	5	—	—
2547.08	Zr	2	—	—	—	2544.32	Cr II	—	2	—	—	2541.91	Si	—	5	Sy	—
2547.075	V I	4	2	—	—	2544.295	Mn	—	3	—	—	2541.835	Fe II	2	5	—	—
2546.95	Ba	—	2	Py	—	2544.269	Ce	3	—	—	—	2541.767	V	7	2	—	—
2546.94	Cl II	—	[20]	Ks	—	2544.267	Ta	2	—	—	—	2541.692	W	10	4	—	—
2546.874	Fe	40	1	—	—	2544.253	Co I	50 r	100	—	—	2541.669	Cr I	12	—	—	—
2546.87	Tu	—	9 h	Me	—	2544.25	Au II	—	10	Ex	—	2541.64	Cd I	2	[1]	Fl	—
2546.803	Ta	80	—	—	—	2544.223	Rh	8	4	—	—	2541.62	In	—	2	Sq	—
2546.79	Br	—	[2]	Bl	—	2544.222	Ru	60	6	—	—	2541.59	La II	—	4	—	—
2546.78	W	1	9	—	—	2544.214	Re	25	—	—	—	2541.522	U	3	2	—	—
2546.737	Co	1	50	—	—	2544.19	Au I	30	8	—	—	2541.510	W	—	3	—	—
2546.671	Ru	8	3	—	—	2544.172	W	8	2	—	—	2541.49	Ca	—	6	Ad	—
2546.661	Fe II	1	30	—	—	2544.042	U	4	2	—	—	2541.475	Ir I	12	2	—	—
2546.653	W	8	1	—	—	2543.999	W	—	5 d	—	—	2541.45	Br	—	[40]	Bl	—
2546.607	Mn	10 h	—	—	—	2543.981	Cb	4	1	—	—	2541.424	Cb	3	80	—	—
2546.552	Sn	100	100	—	—	2543.98	Cl II	—	[10]	Ks	—	2541.370	U	6	2	—	—
2546.497	W	—	4	—	—	2543.973	Mn	—	3 h	—	—	2541.353	Cr I	60	3	—	—
2546.456	Cr	—	2	—	—	2543.971	Ir I	200 h	100	—	—	2541.352	Pt I	15	3	—	—
2546.41	Br	—	[5]	Bl	—	2543.941	Rh	15	100 r	—	—	2541.284	Ru	50	—	—	—
2546.40	La II	—	20 hl	Me	—	2543.92	Cs	—	[20]	Bs	—	2541.153	Rh	2	15	—	—
2546.37	Xe	—	[3]	Hu	—	2543.920	Fe	40	20	—	—	2541.109	Mn	—	80	—	—
2546.350	U	2	2	—	—	2543.875	Na I	12 R	—	Fl	—	2541.097	Fe II	1	15	—	—
2546.32	Lu	—	5 h	Me	—	2543.84	Sb	—	25	m	—	2541.090	Re	20 h	—	—	—
2546.311	V	—	7	—	—	2543.831	Re	20	—	—	—	2541.089	Cb	—	3 h	—	—
2546.284	W	2 h	12	—	—	2543.82	Dy	10	—	—	—	2541.056	W	1	7	—	—
2546.165	Co	—	20	—	—	2543.817	Na I	6 R	—	Fl	—	2541.044	U	—	8	—	—
2546.1	Cs	—	[2]	Bs	—	2543.804	Os	10	1	—	—	2541.029	Rh I	5	3	—	—
2546.034	Ir I	100 h	20	—	—	2543.728	V I	12	9	—	—	2540.976	Fe I	100 R	10	—	—
2545.983	V I	50	10	—	—	2543.72	Te	—	[10]	Bl	—	2540.97	Yb	—	2 wh	—	—
2545.979	Fe I	100 R	30	—	—	2543.71	Gd	2	—	—	—	2540.94	W	7	3	—	—
2545.96	Pr	—	3	—	—	2543.678	Ru	20	—	—	—	2540.9	Rn	—	[3]	Wo	—
2545.91	U	5	2	—	—	2543.667	Re	20 r	—	—	—	2540.811	Cb	1	3 h	—	—
2545.900	Ni II	20	900 h	—	—	2543.647	Fe	700	2	—	—	2540.765	Mn	—	10	—	—
2545.79	U	2	2	—	—	2543.639	Zr II	3	2	—	—	2540.741	Os	40	3	—	—
2545.778	Ir I	2	—	—	—	2543.611	Mo	2	15	—	—	2540.70	Al II	—	[15]	Sy	—
2545.769	Ru	12	3 wh	—	—	2543.536	Ce	4	—	—	—	2540.666	Fe II	6	30	—	—
2545.747	Th	10	3	—	—	2543.47	Ru	—	8	—	—	2540.658	Ir I	4	—	—	—
2545.746	Ce	2	—	—	—	2543.452	Mn	4	100	—	—	2540.65	Co	6	40	—	—
2545.695	Rh	50	10	—	—	2543.438	W	12	2	—	—	2540.615	Cb	2	150	—	—
2545.644	Cr I	15	1	—	—	2543.431	Fe II	—	5	—	—	2540.531	Fe	—	2	—	—
2545.637	Cb	1	150	—	—	2543.384	Fe II	5	50	—	—	2540.52	Cs	—	[2]	Bs	—
2545.6	Bi II	—	2	MI	—	2543.37	Hg II	—	[3]	Ps	—	2540.519	Re I	25	—	—	—
2545.60	Al II	—	[50]	Sy	—	2543.35	Pd II	—	[2]	Bx	—	2540.451	Mo	40 h	1	—	—
2545.57	Ho	—	10	Ex	—	2543.349	Mo	25	2	—	—	2540.422	W	—	5	—	—
2545.570	W	8	3	—	—	2543.316	W	—	12	—	—	2540.404	Ir I	10	2	—	—
2545.538	Ir I	10	2	—	—	2543.250	Ru	50	150	—	—	2540.4	Ti	—	2 d	Cx	—
2545.520	Fe II	—	1	—	—	2543.205	U	2	2	—	—	2540.30	U	2	2	—	—
2545.494	Re	60	—	—	—	2543.140	Cr	—	10	—	—	2540.300	Ru	10	100	—	—
2545.490	Ta	15	15	—	—	2543.13	Hf II	—	2 h	—	—	2540.28	Yt	10	—	—	—
2545.462	V	2	15	—	—	2543.086	Ce	12	2	—	—	2540.188	Mn	—	5	—	—
2545.433	Fe II	—	4	—	—	2543.06	Br	—	[2]	Bl	—	2540.169	W	1	5	—	—
2545.410	U	4	4	—	—	2542.935	V	2	35	—	—	2540.14	Mo	—	15	—	—
2545.371	Mo	10	—	—	—	2542.925	Mn	1	100	—	—	2540.13	I	—	[12]	Bl	—
2545.354	Rh	8	150	—	—	2542.82	Yb	—	4 wh	Me	—	2540.12	Al II	—	[30]	Sy	—
2545.345	Th	15	4	—	—	2542.796	Ir	10	2 h	—	—	2540.12	Tb	3	50	Ed	—

2540.0—2532.1 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2540.08	A	-	[2]	Rt	2537.173	Fe I	3	-	-	2534.45	I	-	[12]	Bl
2540.020	Ni I	40	1	-	2537.169	Pd II	-	100	-	2534.441	Cb	1	40	-
2539.979	Fe	2	20 h	-	2537.145	W	1	15	-	2534.416	Fe II	7	50	-
2539.902	W II	2	20	-	2537.141	Fe II	-	2	-	2534.336	Cr II	8	10	-
2539.878	U	2	2	-	2537.039	Rh	15	100	-	2534.332	Hf	-	5 h	-
2539.796	Mn	10	-	-	2537.02	Br	-	[4]	Bl	2534.259	V I	2	12	-
2539.721	Rh	5	2	-	2536.95	Lu	10	20	Me	2534.24	I	-	[12 h]	Bl
2539.719	Ru	12	100	-	2536.926	V	10	-	-	2534.210	Mn II	-	25	-
2539.702	Ta	2	-	-	2536.849	Mo	25	4	-	2534.180	Ce	2	-	-
2539.650	Zr I	50	-	-	2536.830	Mn	-	5	-	2534.166	Os	8	2	-
2539.648	Mn	10	-	-	2536.817	Fe II	10	4	-	2534.162	Ta	3	-	-
2539.612	W	8	-	-	2536.802	Co	-	2	-	2534.15	Mn	-	25 d	-
2539.610	Ir	2	5	-	2536.794	U	4	2	-	2534.146	W	2	15	-
2539.54	Se	2	-	-	2536.76	La II	-	3 d	-	2534.101	Re	10	-	-
2539.504	U	2	[10]	Bl	2536.75	Tb	3	10	m	2534.1	air	-	6	-
2539.44	Mo	1	20	-	2536.71	Pr	-	8	-	2534.072	Rh	4	4	-
2539.42	Tb	-	10	Ex	2536.706	Rh	15	5	-	2534.01	P I	50	[20]	Ks
2539.400	Mn	-	20 Wh	-	2536.673	Fe II	1	5	Do	2534.006	Ir I	2	-	-
2539.358	Pd II	-	50 wh	-	2536.67	Ta	2 h	-	-	2534.001	Ru	4	80	-
2539.357	Fe I	15	-	-	2536.669	In II	-	[10]	Ps	2533.982	W	10	1	-
2539.356	Zr II	1	4	-	2536.665	Ir	3	-	-	2533.966	Pd	-	5 h	-
2539.346	Re	15	-	-	2536.605	W	1	12	-	2533.963	V	1	10	-
2539.311	W	6	15	-	2536.600	U	3	2	-	2533.920	Cb	1	12 hl	-
2539.31	U	2	2	-	2536.56	Bi	5 h	2 h	To	2533.91	Cd I	2	[1]	Fl
2539.226	Cb	1	10	-	2536.558	Th	5	10	-	2533.81	Co	5 r	60	Ex
2539.205	Pt I	400	20	-	2536.519	Hg I	2000 R	1000 R	Cn	2533.805	V	10	-	-
2539.192	W	-	10 hl	Me	2536.493	Co I	1	2	-	2533.804	U	-	-	-
2539.174	Ca II	-	[2]	Ot	2536.487	Pt I	100	10	-	2533.803	Fe	12	-	-
2539.1	bh C	12	-	L	2536.238	U	4	2	-	2533.69	Au	-	10 h	-
2539.100	Ni II	-	250 w	-	2536.227	Ta	100 W	-	-	2533.633	W	10	5	-
2539.08	Ca	-	[2]	Bs	2536.224	Fe	3	-	-	2533.627	Fe II	8	50	-
2539.01	Hg I	3 h	[3]	Ps	2536.216	Ru	12	6	-	2533.626	Zr II	-	2	-
2538.997	Fe	10	20	-	2536.127	Ir	2	1	-	2533.619	I II	-	[100]	Mu
2538.989	U	3	2	-	2536.08	Mn	-	12	-	2533.61	Ho	-	10	Ex
2538.953	Cr	-	2	-	2536.04	A II	-	[20]	Rt	2533.591	Rh	2	2	-
2538.94	O	-	[8]	Mh	2536.01	Yb	-	6	Me	2533.556	Mo	-	20	-
2538.915	Mn	-	8	-	2535.988	W	4	12	-	2533.44	Ca	-	[20]	Bs
2538.912	Zr	1	2	-	2535.967	Ni	25	-	-	2533.41	Al II	-	[2]	Sy
2538.904	Fe II	1	3	-	2535.967	Pt	25	5	-	2533.41	Te	-	[5]	Bl
2538.884	Ir I	8	-	-	2535.964	Co I	10 r	40	-	2533.362	V	1	15	-
2538.809	Fe II	15	30	m	2535.96	Ta	4	-	-	2533.317	Mn	-	10	-
2538.733	U	6	2	-	2535.94	Pd	-	[3 h]	Bx	2533.312	Re	25	-	-
2538.699	Fe II	-	5	-	2535.90	U	5	2	-	2533.286	W	-	8	-
2538.68	Br	-	[2]	Bl	2535.871	Ti II	20	60	-	2533.236	Ru I	50	8	-
2538.67	Yb	10	20	-	2535.870	Th	5	2	-	2533.233	U	8	4	-
2538.67	Cs	-	[2]	Bs	2535.65	P I	100	[30]	Ks	2533.229	Ge I	5	5	-
2538.6	K	-	[10]	Sg	2535.645	Mn	-	80	-	2533.21	Ho	-	10	Ex
2538.497	Fe II	2	10	-	2535.604	Fe I	1000	-	-	2533.189	Zr	3	-	-
2538.455	Mo	30	125	-	2535.598	Ta	50 h	-	-	2533.188	Cr	2	80	-
2538.453	Ir	3	-	-	2535.592	Ru	-	100	-	2533.16	Al II	-	[3]	Sy
2538.430	U	15	6	-	2535.58	U	-	8	-	2533.143	Fe	2	1	-
2538.40	La II	-	2	-	2535.576	W	-	10	-	2533.14	La II	-	15	Me
2538.38	Pr	-	10	-	2535.57	I	-	[30]	Bl	2533.131	Ir I	100	20	-
2538.347	W	9	-	-	2535.477	Fe II	-	20	-	2533.061	Mn	20	1	-
2538.34	Kr II	-	[5 whl]	Me	2535.364	Fe	1	3	-	2533.05	Te	-	[10]	Bl
2538.29	Cr	-	25	-	2535.332	W	8	1	-	2533.042	Ru	-	5	-
2538.201	Fe II	2	35	-	2535.307	Ag II	10	25	-	2533.002	Ta	30	-	-
2538.19	Yb	1	3	-	2535.28	A II	-	[2]	Rt	2532.97	Hf II	3	4	Me
2538.18	Ti I	10 R	5	Fl	2535.222	Ru	-	30	-	2532.962	Re	15	-	-
2538.12	Lu	-	3	Me	2535.15	Zr II	1	5	Ks	2532.951	W II	2	12	-
2538.102	Os	5	1	-	2535.124	Fe I	2	-	-	2532.877	Fe I	3	1	-
2538.058	Cb	3	4 h	-	2535.102	W	12	-	-	2532.763	Mn	-	20	-
2538.047	Mn	-	25	-	2535.07	Ag II	-	[10]	Bx	2532.721	U	2	2	-
2538.02	Xe II	-	[2 h]	Hu	2535.031	Mn	-	3	-	2532.716	W	-	7	-
2538.019	Zr I	15	-	-	2534.98	La II	-	6	Me	2532.69	Mo	-	4 whd	-
2538.00	Au	-	5 h	-	2534.979	Er	4	1	-	2532.661	Rh	4	5	-
2537.997	Os	-	15	-	2534.967	Ta	30	-	-	2532.655	Al II	-	[8]	Sy
2537.974	Pd II	-	100	-	2534.949	U	12	4	-	2532.57	Yb	-	2 h	-
2537.950	Fe	6	-	-	2534.944	Ru	3	40	-	2532.569	Bi	25 wh	-	-
2537.940	Ta	8	15	-	2534.92	Pr	-	2 wh	-	2532.53	Fe	10	-	-
2537.80	Te	-	[300]	Bl	2534.866	Ce	5	-	-	2532.520	Ir I	20	3	-
2537.79	As	-	5	Ro	2534.83	Ga I	-	[20]	Sy	2532.460	Zr II	30	20	-
2537.729	Rh	4	50	-	2534.826	V	20	-	-	2532.452	Th	10	2	-
2537.703	U	3	4 h	-	2534.825	W II	2	15	-	2532.436	Os	12	3	-
2537.675	Ir I	15	3	-	2534.801	Re	100 w	-	-	2532.43	Br	-	[5]	Bl
2537.64	Yb	4	15	-	2534.78	Pb	-	2	Sx	2532.415	Ca	4	-	-
2537.619	V	-	25	-	2534.775	Hg I	30	30	-	2532.41	W	-	9	-
2537.618	W	4	-	-	2534.74	A	-	[40]	Rt	2532.378	Si I	30	40	-
2537.46	Co	-	10	-	2534.676	W	12	-	-	2532.368	U	8	2	-
2537.458	Fe	3	-	-	2534.621	Ti II	25	80	-	2532.33	Dy	3	-	-
2537.353	Mn	-	2	-	2534.599	Pd II	-	100	-	2532.31	Mo	8	30	-
2537.330	Hf II	20	15	-	2534.57	Rh	2 w	100 w	-	2532.279	V	4	-	-
2537.296	U	10	2	-	2534.520	W II	10	80	-	2532.274	Ir	2	-	-
2537.225	Ir I	35	10	-	2534.467	Ta	25	-	-	2532.21	Pd	-	[5 h]	Bx
2537.19	Te	-	[5]	Bl	2534.457	Ir I	100	10	-	2532.199	Ir I	4	1	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2532.175	Co I	-	75	-	2529.474	Ir I	25	5	-	2527.053	Ru	2	5	-
2532.125	Ta	80	100	-	2529.407	Pt I	80	-	-	2527.03	Pb	-	2	Sx
2532.10	Al II	-	[15]	Sy	2529.339	W	8	4	-	2526.98	Xe II	-	[8]	Hu
2532.076	Ni I	30	-	-	2529.308	Fe	10	-	-	2526.91	O II	-	[25]	Mh
2532.015	Ru	10	-	-	2529.302	Cu II	-	600	IBu	2526.88	I	-	[40]	Bl
2531.985	Os	8	20	-	2529.3	Rn	-	[3]	Pe	2526.834	Fe II	-	1	-
2531.900	V	-	4 wh	Me	2529.224	Fe II	-	2	-	2526.83	Lu	1	10 h	Me
2531.876	W	-	5	-	2529.216	W	-	6	-	2526.828	Ru	50	20	-
2531.840	Cr II	4	5	-	2529.14	Cr	2w	-	-	2526.819	Re	20	-	-
2531.801	U	6	2	-	2529.133	Fe I	80 R	5	-	2526.79	Xe	-	[8]	Hu
2531.780	V	2	-	-	2529.132	Mn	80	5 d	-	2526.766	Ir I	3	1	-
2531.745	Fe	2	-	-	2529.090	Fe	-	70	-	2526.76	Pd	-	[3 h]	Bx
2531.742	Rh	2	-	-	2528.976	Ni	20	2	-	2526.73	Cu II	-	50	-
2531.69	Hg I	3 h	[3]	Ps	2528.972	Ta	2	-	-	2526.664	Ta	50	-	-
2531.615	V	-	4	-	2528.967	U	2	2	-	2526.62	Pb II	-	[100]	Gs
2531.6	Tl	-	100	Cx	2528.967	Co I	50 R	-	-	2526.60	I	-	[12]	Bl
2531.60	La	-	8	Me	2528.912	W	3	15	-	2526.589	Cu II	-	200	IBu
2531.548	Na II	6	[60]	Fr	2528.88	Cl	-	[8]	An	2526.542	U	8	2	-
2531.516	Ta	25	-	-	2528.879	Fe	2	2	-	2526.477	Al II	-	[3]	Sy
2531.444	W	-	3	-	2528.878	Ru	60	2	-	2526.453	Ta	150	-	-
2531.44	Fe	4	-	-	2528.866	Mo	1	25	-	2526.420	W	8	4	-
2531.402	U	2 h	2	-	2528.836	V	25	150 R	-	2526.354	Ta	100	-	-
2531.36	Xe	-	[3]	Hu	2528.8	Ca	-	[8]	Ba	2526.295	Fe II	10	60	-
2531.35	Pr	-	5	-	2528.77	U	5	2	-	2526.28	Yb	-	3 h	-
2531.293	Ta	10	-	-	2528.715	Ru	30	-	-	2526.215	V I	150	150 R	-
2531.254	Cb	1	80	-	2528.71	A II	-	[5]	Rt	2526.209	W II	3	7	-
2531.251	Tl II	30	125	-	2528.702	Mn	12	2	-	2526.200	Cd II	-	2	-
2531.216	V	2	1 h	-	2528.615	Co II	4	200	-	2526.075	Fe II	3	20	-
2531.193	Hf II	25	50	-	2528.59	Lu	-	5 h	Me	2526.024	Ta	100	80	-
2531.147	Ce	2	-	-	2528.59	Ta	4	1	-	2526.013	Os	10	1	-
2531.115	Sn	40	15 W	-	2528.535	Sb I	300 R	200	Lg	2525.98	Hg I	3 h	[5]	Ps
2531.084	Fe II	-	4	-	2528.516	Si I	400	500	Fl	2525.941	Ir	2	5	-
2531.00	Cr	-	8	-	2528.508	Ba II	-	50 r	-	2525.932	Ru I	8	2 wh	-
2530.992	Ba	-	2 h	Sz	2528.49	Dy	4	-	-	2525.931	Th	8	4	-
2530.990	W	9	15	-	2528.49	Xe II	-	[3]	Hu	2525.865	Fe II	-	5	-
2530.977	I II	-	[60]	Mu	2528.468	V	50	150 R	-	2525.85	U	2 h	2	-
2530.970	Cb	2	100	-	2528.392	Ir	-	10 h	-	2525.819	Ta	2	-	-
2530.88	Tl II	-	[80]	MI	2528.36	Th	-	5	-	2525.808	Cb	3	80	-
2530.836	U	5	2	-	2528.33	A	-	[10]	Rt	2525.78	Te	-	[5]	Bl
2530.82	Tl II	-	[60]	MI	2528.33	Yb	-	3	-	2525.683	W	12	3	-
2530.70	Te I	-	[30]	Bl	2528.287	Ce	15	1	-	2525.68	Ca	-	[20]	Ba
2530.700	W II	8	12	-	2528.244	Cr I	30	-	-	2525.669	Mn	10	10	-
2530.692	Fe	25	70	I	2528.23	Tb	-	20	Ex	2525.632	Ru	30	-	-
2530.67	Tl II	-	[100]	MI	2528.184	Co	-	40	-	2525.601	Tl II	35	125	-
2530.57	Ca	-	6	Ad	2528.174	Fe	6	-	-	2525.561	Re	20	-	-
2530.56	Bi II	-	3	MI	2528.17	In	-	5	Sq	2525.51	A	-	[5]	Rt
2530.55	Lu	-	8 h	Me	2528.163	W	-	6	-	2525.389	Cd	25 h	-	-
2530.464	Ru	5	4	-	2528.11	Au	-	5 h	-	2525.388	Ni II	-	300 Wh	-
2530.46	Pr	-	2	-	2528.099	U	10	2	-	2525.387	Fe II	20	60	-
2530.447	Cr I	35	1	-	2528.050	Ni I	20	-	-	2525.386	U	3	2	-
2530.41	Bi II	-	3	MI	2528.041	Ru	-	60	-	2525.332	Ta	15	-	-
2530.410	Ir	-	10	-	2528.013	Cr I	35	1	-	2525.174	Fe	30	-	-
2530.338	Mo	3	25	-	2527.985	Tl I	15	-	-	2525.107	Ru	-	2	-
2530.3	Rn	-	[7]	Pe	2527.98	Se	-	[25]	Bl	2525.1	bh C	12	-	L
2530.30	O II	-	[40]	Fl	2527.938	Ir	3	-	-	2525.052	Ir I	20	3	-
2530.298	U	6	2	-	2527.927	Fe	2	-	-	2525.022	Fe	20	1	-
2530.28	Bi II	-	3	MI	2527.920	Cb	2	50	-	2525.00	Yb	-	2	-
2530.22	Cr	-	6	-	2527.903	V	35	300 R	-	2524.987	Cb	5	2	-
2530.18	Xe II	-	[2]	Hu	2527.897	Ru	2	40	-	2524.986	W	2	4	-
2530.179	V I	100	70 R	-	2527.86	Yb	1	5	-	2524.965	Co II	50 w	700	-
2530.17	Se	-	[5]	Bl	2527.84	La II	-	3	Me	2524.93	Br	-	[15]	Bl
2530.165	Cb	-	3	-	2527.784	Ir	3	-	-	2524.918	U	8	2	-
2530.133	Co I	40 w	300	-	2527.769	W	12	5	-	2524.90	Te	-	[15]	Bl
2530.106	Fe II	2	30	-	2527.756	Os	3	10 h	-	2524.876	Ir	5	1	-
2530.105	Cb	-	5	-	2527.72	I	-	[20]	Bl	2524.858	Ru	10	80	-
2530.09	Zn I	10 l	-	Fl	2527.694	Fe II	1	30	-	2524.857	Zr	4	-	-
2530.07	Te	-	[15]	Bl	2527.68	U	4	2	-	2524.852	Pt II	-	3 h	Sh
2530.04	Hg	-	[2]	Dj	2527.556	W	-	8	-	2524.811	Mo	40 h	-	-
2529.98	Th	-	12	-	2527.47	Al II	-	[3]	Sy	2524.71	Mo	-	25	-
2529.95	Cr	-	20	-	2527.436	Mn	150	12	-	2524.702	W	-	3	-
2529.93	Cl	-	[5 h]	Jv	2527.433	Fe I	200 R	50	Bu	2524.639	Tl II	15	60	-
2529.92	O	-	[8]	Mh	2527.433	U	-	10	-	2524.601	Co	-	30	-
2529.854	Tl I, II	25	2	-	2527.36	Ta	3 h	2 h	-	2524.55	N II	-	[3]	Fl
2529.839	Mo	25	20	-	2527.352	Ru	5	4	-	2524.54	Gd	3	-	-
2529.833	Fe I	50 R	2	IJa	2527.292	Rh	1	25	-	2524.492	Bi I	100	25	-
2529.781	Ir I	5	1	-	2527.28	I	-	[12]	Bl	2524.473	Mn	12	1	-
2529.78	Hf II	-	3 h	Me	2527.201	W II	6	10	-	2524.47	U	-	4	-
2529.724	W	12	6	-	2527.16	Kr	-	[3 h]	Me	2524.46	Xe II	-	[3]	Hu
2529.699	Ru	20	8	-	2527.14	Mo	1	25	-	2524.385	Ru	-	8	-
2529.547	Fe II	15	100	-	2527.14	Te	-	[10]	Bl	2524.33	Br	-	[2]	Bl
2529.546	Cb	-	5	-	2527.139	U	-	8	-	2524.311	U	5	4	-
2529.53	Yb	-	2 h	-	2527.115	Cr I	8	2	-	2524.304	Pt I	-	10	-
2529.53	Hg I	2	[1]	Di	2527.107	Zr	4	-	-	2524.289	Fe I	100 R	50	-
2529.51	U	2	2	-	2527.102	Fe II	1	60	-	2524.216	Ni I	50 R	-	-
2529.503	Re	30	-	-	2527.087	Os	30 r	5 r	-	2524.20	In	-	2	Sq

2524.1—2515.6 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2524.12	Dy	2	-	2521.146	W	1	7	2518.400	Ru	3	50
2524.118	Sr I	400	400	2521.144	V	-	10 whl	2518.35	Cr	-	15 h
2524.113	Ba	-	5	2521.12	Mo	1	20	2518.291	Pd	-	3 h
2524.11	Hg I	5	-	2521.094	Fe II	2	20	2518.147	Mn	-	40
2524.1	air	-	4	2521.089	Ir I	2	-	2518.142	W	6	15
2524.09	Tm	10	3	2521.03	Yb	1	4	2518.117	Pd II	-	15 wh
2524.034	W	-	10	2520.978	W	12	1	2518.101	Fe I	200 R	50
2524.0	Rb	-	[2]	2520.968	Fe	3	-	2518.085	Cr	2	-
2524.000	Ce	10	-	2520.94	Tm	8	2	2518.04	Lu	-	4
2523.955	V II	10	100	2520.883	Fe	80	-	2517.99	Yb	-	4
2523.907	Sn	60	60	2520.883	U	2 h	2	2517.97	O II	-	[25]
2523.89	U	2	2	2520.88	Tm	6	1	2517.94	Ir	-	10 h
2523.755	Cb	1 w	5 w	2520.85	N II	-	[15]	2517.920	Os	12	5
2523.699	U	2	2	2520.8	Ca	-	[2]	2517.869	Co I	10 w	-
2523.660	Fe	15	10	2520.790	W	-	3	2517.868	Cr	8	-
2523.654	Hf	-	4 h	2520.789	Ru	6	18	2517.859	Hf	5	-
2523.589	W	2	-	2520.677	Fe II	-	6	2517.832	Mo	20	-
2523.511	V	4	-	2520.661	Th	10	6	2517.800	Co I	6	10
2523.482	Rh	-	25	2520.659	Cb	-	3 h	2517.659	Cb	1	5 h
2523.413	U	6	4	2520.656	Cr	-	15	2517.659	Fe I	20	12
2523.406	W	10	6	2520.64	Al II	-	[8]	2517.616	Ru	50	-
2523.37	Hg II	-	[2]	2520.584	Mn	-	25 d	2517.61	Dy	10	-
2523.32	Cr	-	20 h	2520.543	Ti I	40	4	2517.566	Cr I	15	-
2523.27	Lu	-	2	2520.540	Ce	2	-	2517.523	Rh	-	150
2523.20	O II	-	[15]	2520.533	Rh	10	1000 wh	2517.502	V I	4	1
2523.18	Mo	1	25	2520.53	Hf	1	2 h	2517.488	Cb	1	10
2523.14	Fe	1	-	2520.511	Cb	6	2	2517.464	Mo	25	-
2523.098	Ru	12	3	2520.452	W	15	10	2517.45	Si	-	10
2523.07	La II	-	5 hl	2520.38	Gd	-	2	2517.45	Hg I	3 h	[1]
2522.985	In I	10	-	2520.351	Ni II	-	2	2517.434	Ti II	20	30
2522.94	Co	-	30	2520.32	Yb	-	3	2517.41	Ti I	30 R	-
2522.882	Cb	-	10	2520.311	Ta	10	-	2517.41	O	-	[50]
2522.85	Tb	3	20	2520.304	V	10 h	1 h	2517.41	Co	-	40 W
2522.848	Fe I	300 R	50	2520.27	Br	-	[6]	2517.40	W	-	8
2522.752	W	-	8	2520.27	N II	-	[8]	2517.317	Ru	60	80
2522.61	Sn II	-	[20]	2520.250	U	6	2	2517.25	Cd II	-	[3]
2522.59	Mo	1	20	2520.190	W	-	3	2517.239	W	-	4
2522.582	Ru	-	8	2520.180	Sb	20	5	2517.211	Fe II	1	3
2522.53	A II	-	[5]	2520.13	Th	5	2	2517.185	Pt I	15	-
2522.51	N II	-	[3]	2520.009	Re I	50	-	2517.145	V I	35 r	25
2522.507	V	2	40	2519.976	Zr	6	-	2517.124	Ti I	3	2
2522.495	Fe I	3	-	2519.949	Ru	12	1	2517.122	U	8	2
2522.42	Yb	4	10	2519.876	W	15	2	2517.120	Fe II	10	60
2522.390	V	-	7	2519.841	Cb	1	3	2517.03	Ca	-	6
2522.340	Cb	1	15	2519.822	Co II	40	200	2517.011	W	-	4
2522.320	Ru	12	2	2519.814	Ti II	3	7	2516.969	U	4	2
2522.27	N II	-	[25]	2519.80	Tm	1	50	2516.916	Cr I	35	2
2522.196	Fe	1	10	2519.788	Os	12	5	2516.881	Hf II	35	100
2522.185	Er	5	1	2519.776	Ta	50	-	2516.83	Yb	2	20
2522.17	Eu	-	4 w	2519.689	Cb	2 w	15 w	2516.81	A II	-	[20]
2522.164	W	8	-	2519.627	Fe	30	20	2516.73	Mn	-	12
2522.16	Tm	15	6	2519.623	V I	125 r	50	2516.717	Ta	5	-
2522.094	U	3	2	2519.515	Cr I	150 r	6	2516.702	Ru	6	8
2522.06	Ca	-	2	2519.441	W II	2	12	2516.65	Cr	-	6 h
2522.043	W II	10	20	2519.41	In	-	2	2516.577	W	12	3
2521.917	Fe I	6	-	2519.405	Fe II	-	4	2516.57	Se	-	[15]
2521.917	Zr II	15	10	2519.39	U	2	2	2516.570	Fe I	10	1
2521.917	Pd II	-	2 h	2519.30	Sb	-	2 h	2516.49	Te	-	[15]
2521.86	Br	-	[5]	2519.249	Ba	-	2 h	2516.42	Cl	-	[2]
2521.814	Fe	1	60	2519.215	La II	-	50	2516.40	In	-	3
2521.796	U	5	15	2519.208	Ru	20	80	2516.362	Yb	2	5
2521.78	Th	2	1	2519.207	Si I	300	300	2516.34	Cd II	-	25
2521.72	Hf II	-	3 h	2519.17	Xe	-	[3]	2516.250	Fe I	2	-
2521.70	Mo	1	10	2519.161	W II	10	5	2516.123	Si I	500	500
2521.69	Hg	-	[2]	2519.047	Fe II	-	70	2516.12	Xe	-	[6]
2521.66	Br	-	[50]	2519.037	Ti I	15	12	2516.118	V	25	100
2521.64	In	-	2	2519.03	Te	-	[5]	2516.116	Re	125	-
2521.615	V	2	-	2519.028	Os	1	30 h	2516.111	Ta	6	2
2521.613	Ru	60	1	2519.025	Cb	2	-	2516.11	Dy	5	-
2521.586	Re	100 R	-	2518.974	U	15	6	2516.109	Mo	25	25
2521.575	V	7	10 h	2518.96	Tb	-	10	2516.1	air	-	7
2521.522	W	-	3	2518.95	Cu II	-	7 h	2516.05	Br	-	[3]
2521.50	Hf	10	18	2518.824	Fe	7	-	2516.006	Ru	20	5 wh
2521.496	Pd II	-	2 h	2518.79	Cd I	15 h	[1]	2515.807	Zn I	150 w	20
2521.485	Hf II	5	10	2518.764	Ta	2	-	2515.798	W II	1	10
2521.485	Fe	-	5	2518.74	Se	-	[15]	2515.79	La II	-	4
2521.404	Cb	3	100	2518.711	Cr I	18	1	2515.759	Ru	6	8
2521.371	In I	30	-	2518.702	W	-	9	2515.746	Rh I	60	10
2521.367	U	6	2	2518.542	Ir I	2	-	2515.729	U	6	2
2521.363	Co	75 R	150	2518.505	Ce	10	20	2515.723	V	1	9
2521.320	W	15	2	2518.505	W	10	3	2515.686	Bi I	100	25
2521.30	Pd II	-	[5 h]	2518.478	U	2	2	2515.66	Mo	10	10
2521.23	Hg I	-	3 h	2518.441	Os	20	5	2515.649	V	6	-
2521.212	Ir	-	5	2518.44	Mo	-	10	2515.60	Yb	-	3
2521.208	Fe	1	2	2518.44	S	-	[8]	2515.60	A II	-	[10]

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2515.576	Pt I	500	20	-	-	2513.098	Ta	10	1	-	-	2510.165	W	10	2	-	-
2515.524	U	3	2	-	-	2513.028	Hf II	25	70	-	-	2510.15	Cd II	-	[2]	-	Tk
2515.498	W	1	5	-	-	2512.927	W	10	12	-	-	2510.139	Ru	30	-	-	-
2515.481	Hf II	20	30	-	-	2512.873	Os	40	3	-	-	2510.138	U	-	6 h	-	-
2515.471	Re	10	-	-	-	2512.848	Fe	3	-	-	-	2510.12	Co	-	20	-	-
2515.460	Na II	3	[5]	-	Fr	2512.814	Ce	3	-	-	-	2509.97	Th	8	3	-	-
2515.364	Ir I	20	3	-	-	2512.806	Ru	80	2	-	-	2509.958	W II	1	15	-	-
2515.360	Ce	2	-	-	-	2512.74	Th	-	15 d	-	-	2509.936	Os	25	1 d	-	-
2515.33	Pd II	-	[10 wh]	-	Bx	2512.689	Hf II	25	50	-	-	2509.779	Ir I	2	-	-	-
2515.330	W	2 d	12	-	-	2512.652	Ta	100	-	-	-	2509.768	Zr II	5	8	-	-
2515.325	Rh	2	25	-	-	2512.651	Ir I	3	-	-	-	2509.710	Ir I	15	2	-	-
2515.285	Ru	60	2	-	-	2512.587	U	3	4 h	-	-	2509.708	Os	8	20	-	-
2515.23	Tb	-	10	-	Ex	2512.58	Yb	-	5 h	-	Me	2509.697	Rh I	40	20	-	-
2515.16	Au II	-	5	-	-	2512.580	Ir	5	15 h	-	-	2509.684	W	-	10	-	-
2515.156	Hf	1	40	-	-	2512.557	Re	25	-	-	-	2509.557	Mo	20	-	-	-
2515.154	Ta	6	-	-	-	2512.524	Fe II	-	40	-	-	2509.47	Hg I	2 h	[1]	-	Di
2515.149	V I	20	10	-	-	2512.481	Ru	4	8 wh	-	-	2509.383	W	-	12	-	-
2515.147	U	-	10	-	-	2512.40	Cr	-	6	-	-	2509.25	Cd II	-	[30]	-	Tk
2515.12	Cr	-	12 wh	-	-	2512.370	In II	-	[30]	-	Ps	2509.189	Ta	4	2	-	-
2515.105	Fe	-	30	-	-	2512.363	Fe	12	1	-	-	2509.154	Ba	-	2 h	-	Sz
2515.082	Mo	8	30	-	-	2512.247	In II	-	[25]	-	Ps	2509.122	Fe II	1	50	-	-
2515.06	B II	-	6	-	Sy	2512.222	U	2	-	-	-	2509.114	Pd II	-	2 h	-	-
2515.044	Os	40 s	5	-	-	2512.210	Na I	4 R	-	-	Fl	2509.11	C II	-	20	-	Fl
2515.032	Pt I	150	20	-	-	2512.192	W	-	4	-	-	2509.09	Hg	-	3	-	Cn
2515.012	I II	-	[20]	-	Mu	2512.128	Na I	2 R	-	-	Fl	2509.08	Tm	80	40	-	Me
2514.96	B	-	6	-	Sy	2512.105	Fe	-	30	-	-	2509.069	Ru	50	20	-	-
2514.914	Fe II	1	25	-	-	2512.103	Ir	-	25 h	-	-	2509.043	Cd I	10	[3]	-	-
2514.87	Se	-	[5]	-	Bl	2512.1	Cs	-	[2]	-	Ba	2509.04	Lu	-	3	-	Me
2514.862	Ce	2	2	-	-	2512.06	Yb	10	50	-	-	2509.034	Zr II	3	2	-	-
2514.79	Hg II	-	[20]	-	Ps	2512.048	Mo	-	10	-	-	2508.988	Re I	125	-	-	-
2514.768	U	12	4	-	-	2512.036	Ta	5	800	-	-	2508.980	Cr I	25	1	-	-
2514.761	Ni II	-	2 h	-	-	2512.03	C II	-	400	-	Fl	2508.949	Fe	1	-	-	-
2514.72	Ho	-	10	-	Ex	2512.03	Hg	-	5	-	Cn	2508.92	Pd II	-	[50]	-	Bx
2514.711	Fe	2	-	-	-	2511.987	Ru	20	40	-	-	2508.90	Pb	-	5	-	Sx
2514.645	Mn	-	12 wh	-	-	2511.972	Cb	-	50 h	-	-	2508.825	V I	3	2	-	-
2514.636	V	10	12	-	-	2511.956	Cr	25	1	-	-	2508.749	Fe	20	1	-	-
2514.628	Mo	25	-	-	-	2511.946	V I	35	2 h	-	-	2508.740	W II	12	10	-	-
2514.568	Sb	30	9	-	-	2511.937	Ir	20	-	-	-	2508.68	I	-	[12]	-	Bl
2514.56	La II	-	3	-	-	2511.828	W	-	8	-	-	2508.667	Ru	-	50	-	-
2514.559	Fe	6	-	-	-	2511.760	Cb	-	10	-	-	2508.667	Mo	30 h	-	-	-
2514.518	W	2	12	-	-	2511.759	Fe II	25	100	-	-	2508.63	Er	-	3	-	-
2514.504	Re	20	-	-	-	2511.74	Kr II	-	[3]	-	Me	2508.610	Os	8 s	1	-	-
2514.478	Pd II	-	200	-	-	2511.71	C II	-	60	-	Fl	2508.538	Cb	-	25	-	-
2514.39	B	-	50	-	Sy	2511.69	Ta	2 d	100 d	-	-	2508.496	Pt I	300	20	-	-
2514.384	V	10	2	-	-	2511.652	V I	40	-	-	-	2508.495	Fe	2	-	-	-
2514.378	Fe II	2	8	-	-	2511.64	Hg I	2 h	[1]	-	Di	2508.45	B	-	2	-	Sy
2514.353	Cb	3	8	-	-	2511.566	Zr I	4	-	-	-	2508.441	W	10	2	-	-
2514.352	W II	-	3 h	-	-	2511.557	Ru	30	5 wh	-	-	2508.426	Ru	12	-	-	-
2514.34	Dy	3	-	-	-	2511.51	Cs	-	[8]	-	Ba	2508.37	In	-	8	-	-
2514.331	Si I	300	200	-	Fl	2511.50	I	-	[20]	-	Bl	2508.357	U	-	4 h	-	-
2514.318	V	15	2	-	-	2511.443	W	-	6	-	-	2508.351	Ir I	8	2	-	-
2514.3	air	-	4	-	-	2511.370	Fe II	3	3	-	-	2508.333	Fe	-	20 h	-	-
2514.29	Xe	-	[3]	-	Hu	2511.254	W	-	5	-	-	2508.267	Ru I	50	-	-	-
2514.26	Hg I	2 h	-	-	Di	2511.22	He II	-	[50]	-	Ps	2508.157	In II	-	[30]	-	Ps
2514.181	Mo	-	10 h	-	-	2511.22	Pd II	-	[3 h]	-	Bx	2508.15	S II	-	[40]	-	Ig
2514.153	Ru	-	4	-	-	2511.21	Ru	-	6 w	-	-	2508.110	Cr I	35	1	-	-
2514.15	Ga II	-	[5]	-	Sy	2511.181	V	15	-	-	-	2508.06	Pd II	-	15 wh	-	-
2514.08	In II	-	[10]	-	Ps	2511.157	Ir I	2	-	-	-	2508.002	W	5	10	-	-
2514.076	W	-	8	-	-	2511.15	Co	3	15	-	-	2507.962	Co	2	30	-	-
2514.072	Pt I	150	10 h	-	-	2511.13	Pr	-	6	-	-	2507.94	Tl I	5 R	-	-	Fl
2514.066	U	-	12	-	-	2511.12	Ho	-	20	-	Ex	2507.899	U	-	8	-	-
2513.934	W	10	2	-	-	2511.098	W	6	7	-	-	2507.899	Fe	40	6	-	I
2513.926	Er	4	-	-	-	2511.052	Ir	3	-	-	-	2507.856	V	20	1 h	-	-
2513.881	Ta	4 w	6	-	-	2511.027	Rh	15	15	-	-	2507.783	Sb	-	10 h	-	Sp
2513.881	Pt II	6	50	-	-	2511.016	Co I	10 r	20	-	-	2507.782	V I	20	1	-	-
2513.868	Ce	2	-	-	-	2511.005	Cb	3	100	-	-	2507.77	O	-	[20]	-	Mh
2513.856	Fe	5	-	-	-	2511.0	bh C	20	-	-	L	2507.741	U	1	2 h	-	-
2513.79	Eu	-	6 w	-	-	2510.971	Ru	20	-	-	-	2507.730	Fe	3	-	-	-
2513.71	Cr	-	10 h	-	-	2510.910	Ti II	-	2	-	-	2507.70	Ti II	-	[30]	-	El
2513.708	Ir I	15	-	-	-	2510.873	Ni II	50 h	250 h	-	-	2507.676	Co I	40 w	8	-	-
2513.666	W	9	-	-	-	2510.834	Fe I	300 R	50	-	-	2507.628	Ir I	10	2	-	-
2513.620	Cr I	20	2	-	-	2510.706	Ta	10	5 d	-	-	2507.620	Er	4	-	-	-
2513.57	Dy	5	-	-	-	2510.68	Mn	-	10	-	-	2507.586	W	-	8	-	-
2513.55	Ga II	-	[7]	-	Sy	2510.655	Rh	5	200 wh	-	-	2507.553	Ta	1	2	-	-
2513.450	W	-	15	-	-	2510.619	Cr I	8	-	-	-	2507.452	Ru	150	1	-	-
2513.363	W	8	-	-	-	2510.56	Kr II	-	[5]	-	Me	2507.430	Fe	2	-	-	-
2513.356	Rh	8	6	-	-	2510.529	Sb	50	20	-	-	2507.412	Re	30	-	-	-
2513.332	Mo	25	-	-	-	2510.50	Yb	-	3	-	-	2507.40	Be II	-	[10]	-	Ps
2513.330	Fe	6	4 wh	-	-	2510.49	Au I	25	15	-	-	2507.39	Ti II	-	[20]	-	El
2513.329	U	1	20	-	-	2510.472	W II	3	15	-	-	2507.35	air	-	8	-	Sq
2513.322	Ru	50	80	-	-	2510.41	In	-	4	-	Sq	2507.326	Cr	15	-	-	-
2513.304	Ce	12	-	-	-	2510.331	Na II	-	[2]	-	Fr	2507.234	W	-	12	-	-
2513.246	Os	50	8	-	-	2510.32	Dy	2	-	-	-	2507.22	Ag II	-	5 h	-	-
2513.21	I	-	[20]	-	Bl	2510.25	Cr	1	2	-	-	2507.14	Tm	10	15	-	Me
2513.15	Al II	-	[15]	-	Sy	2510.245	V I	4	2	-	-	2507.137	Cb	3	2	-	-

2507.0—2498.0 Å.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2507.067	U	6	2	-	2504.25	Al II	-	[3]	Sy	2500.736	Hf II	12	20	-
2507.014	Fe II	1	10	Do	2504.249	Cb	-	4 wh	-	2500.705	Ga	5	5 r	-
2507.014	Ru	60	80	-	2504.098	Fe	2	-	-	2500.671	Cr I	8	-	-
2506.906	U	6	2	-	2504.08	Ag II	-	50 h	m	2500.575	Re	20	-	-
2506.905	V I	50 r	35	-	2504.042	Pt I	60	5	-	2500.501	Co	10 h	-	-
2506.899	Si I	300	200	-	2504.014	Zr II	10	5	-	2500.50	Pb	-	2	Sx
2506.88	Ag II	2	[2 h]	Bx	2503.962	W	10	1	-	2500.44	Mo	-	25	-
2506.877	Co I	10 w	3	-	2503.87	Kr II	-	[7 wh]	Me	2500.42	A	-	[5]	Rt
2506.86	Xe	-	[4]	Hu	2503.870	Fe II	8	70	-	2500.420	Cb	2	8	-
2506.601	Ir	10	2	-	2503.843	Rh	2	150	-	2500.381	V I	2	-	-
2506.60	Ag II	15	50 h	-	2503.670	Os	15 h	10 h	-	2500.271	Ir I	4	1 h	-
2506.569	Fe	10	-	-	2503.655	Fe	80	-	-	2500.173	Ga	12	10 r	-
2506.56	Kr	-	[5 wh]	Me	2503.64	Si	-	[2]	Sy	2500.136	Ru	-	20	-
2506.56	O	-	[8]	Mh	2503.612	W	3	-	-	2500.110	W	3	12	-
2506.462	Co II	50 w	200 h	-	2503.59	Mo	-	5	-	2500.036	Pd	-	4 h	Dn
2506.453	U	-	2 h	-	2503.556	Fe II	2	20	-	2499.941	W II	1	2	-
2506.429	Fe II	1	3	-	2503.491	Fe	4	-	-	2499.924	Os	5 h	2	-
2506.414	Ru	-	12	-	2503.488	Er	4	1	-	2499.849	Cd II	-	15	-
2506.30	Au	-	5	-	2503.325	Fe II	5	50	-	2499.844	Cr I	20	-	-
2506.295	Na II	-	[5]	Fr	2503.32	Au	-	30	-	2499.781	V I	2	-	-
2506.270	Cu II	-	500 r	IBu	2503.303	V I	25	10	-	2499.780	Ru	50	4	-
2506.26	Ru	-	3 wh	-	2503.042	W	6	1	-	2499.75	Te	-	[300]	Bl
2506.220	V	10	150	-	2503.020	V	7	100	-	2499.750	Cb	-	200	-
2506.2	Rn	-	[7]	Pe	2503.007	Ta	-	2	-	2499.689	W II	10	15	-
2506.19	Mo	-	40 h	-	2502.985	I II	-	[150]	Mu	2499.599	In II	-	[80]	Ps
2506.148	W	8	-	-	2502.983	Ir I	100 w	5	-	2499.563	Ru	4	3	-
2506.093	Fe II	2	70	-	2502.903	Th	6	3	-	2499.56	I	-	[30]	Bl
2506.030	W	10	15	-	2502.839	Mo	10	15	-	2499.55	A II	-	[2]	Rt
2505.990	Zr	12	-	-	2502.818	W	-	4	-	2499.53	Tm	5	2	Me
2505.936	Re	20	-	-	2502.8	Rn	-	[7]	Pe	2499.51	Bi	25	12	Rk
2505.926	Pt	150	10	-	2502.75	Cl II	-	[40]	Ks	2499.438	W	10	1	-
2505.907	Cb	1	10	-	2502.70	Tb	-	10	Ex	2499.426	Mn	15	-	-
2505.880	Ru	-	10	-	2502.70	Tm	5	6	Me	2499.372	Ru	-	8	-
2505.837	Ni II	-	50	-	2502.656	Hf	8	6	-	2499.37	Hg II	-	3	Dj
2505.818	W II	-	3	-	2502.628	Ir I	10	2	-	2499.34	In II	-	[10]	Ps
2505.740	Ir I	15	2	-	2502.531	Cr	100 r	3	-	2499.319	I II	-	[60]	Mu
2505.739	Pd II	3	30	-	2502.491	Cb	3	50	-	2499.29	O	-	[20]	Mh
2505.673	Rh I	10	8	-	2502.474	Mn	-	3	-	2499.259	Mo	1	5	-
2505.672	Ru	3	6	-	2502.456	Rh I	2	6	-	2499.251	V I	2	2	-
2505.648	W	10	2	-	2502.407	U	2	10	-	2499.25	Br	-	[6]	Bl
2505.628	Fe	12	-	-	2502.390	Fe II	3	60	m	2499.22	Te	-	[10]	Bl
2505.615	Th	10	3	-	2502.377	Re	60	-	-	2499.216	W	2	15	-
2505.546	V I	7	4	-	2502.377	Ru	20	4 h	-	2499.21	Tm	8	4	Me
2505.487	W	-	9	-	2502.3	Ti	-	20	Cx	2499.11	Pd II	-	[6]	Bx
2505.486	Fe	10	1	-	2502.290	Os	10 s	1	-	2499.099	V I	7	2	-
2505.46	Yb	2	5	-	2502.222	Mo	-	20	-	2499.03	Gd	2	-	-
2505.391	Re	20	-	-	2502.2	Cs	-	[2]	Bs	2499.017	Rh	15 w	2 h	-
2505.375	W II	10	3	-	2502.176	W	2	6	-	2498.99	Tu	-	3	Me
2505.35	Se	-	[5]	Bl	2502.077	W	2	6	-	2498.949	Ti II	-	35	-
2505.316	Ta	12	2	-	2502.001	Zn II	20	400 w	Hz	2498.90	Pb I	-	15	-
2505.289	U	6	2	-	2502.0	Rn	-	[7]	Pe	2498.894	Fe II	20	70	-
2505.229	Ir I	5	-	-	2501.99	Yb	5	20	-	2498.891	Ir I	2	-	-
2505.218	Fe II	2	25	-	2501.985	Ta	20	12	-	2498.88	Au	-	5	-
2505.17	Hf II	-	2 h	-	2501.90	U	2	2	-	2498.868	Th	10	5	-
2505.105	Mo	25	-	-	2501.900	W II	10	10	-	2498.83	Co	2	80	-
2505.104	Rh	2	200	-	2501.888	Ru	30	30	-	2498.829	U	8	10	-
2505.089	Ba	-	2 h	Sz	2501.80	O	-	[35]	Mh	2498.822	Cr	-	8	-
2505.04	In	-	2	Sq	2501.781	W	10	-	-	2498.81	Ag	1	3	Fr
2505.006	Fe	10	1	-	2501.722	Re	80	-	-	2498.784	Pd II	4	150 h	-
2504.944	Cb	-	4	-	2501.695	Fe I	20	4	-	2498.757	Ta	10	-	-
2504.92	Br	-	[3]	Bl	2501.613	V I	35	30	-	2498.63	Tb	-	10	Ex
2504.913	Ru	-	5	-	2501.609	Mo	2	3	-	2498.590	In II	-	[50]	Ps
2504.796	Zr	8	-	-	2501.482	Ru	60	1	-	2498.572	Ru	60	40	-
2504.76	Ag	-	3	-	2501.405	Cb	-	150	-	2498.57	Hf II	-	2 h	-
2504.74	Tm	-	30	Me	2501.381	U	3	4 h	-	2498.53	Cl II	-	[30]	Ks
2504.705	W	12	5	-	2501.335	W	1	9	-	2498.500	Pt I	400	50	-
2504.70	O	-	[15]	Mh	2501.272	Rh	50 r	50	-	2498.419	Ru	60	40	-
2504.693	U	5	2	-	2501.18	La II	-	15 h	Me	2498.414	Os	20 hl	5	-
2504.651	Cb	10	4	-	2501.18	Hg	-	[2 h]	Di	2498.402	Th	8	3	-
2504.60	K II	-	[5]	Bn	2501.132	Ni	20	-	-	2498.40	Br	-	[3]	Bl
2504.598	Re	80	-	-	2501.127	Fe I	100 R	25	-	2498.35	Yb	1	3	Me
2504.59	Sn	-	[30]	Mc	2501.122	Th	-	20 h	-	2498.330	Ta	30	1 h	-
2504.535	Ti	20	1	-	2501.078	In II	-	[18]	Ps	2498.281	Mo	10	25	-
2504.533	Zr I	2	-	-	2501.036	W	-	3	-	2498.267	U	3	8	-
2504.527	W	10	1	-	2501.0	Bi II	-	8	MI	2498.26	W	-	8	-
2504.517	Co I	4	10	-	2500.926	Fe	12	40	-	2498.253	Cb	1	25	-
2504.507	Os	10	1	-	2500.922	P II	-	[50]	Ri	2498.25	As	-	5	Ro
2504.453	Ta	200	1	-	2500.911	Os	12	4	-	2498.232	V I	10	4	-
2504.387	Os	8	2	-	2500.90	Si	-	[2]	Sy	2498.22	Pd II	-	3 h	-
2504.369	Ir I	10	5	-	2500.900	In II	-	[25]	Ps	2498.220	Re	30	-	-
2504.308	W	5 d	-	-	2500.88	Te	-	[10]	Bl	2498.21	Rh	-	3 h	Ex
2504.306	Cr I	150 r	3	-	2500.864	U	18	12	-	2498.208	Fe	3	-	-
2504.294	Rh	1	10	-	2500.86	Cd II	-	[2]	Tk	2498.097	W	-	3	-
2504.290	V	-	7 h	Me	2500.86	Lu	5 h	1	Me	2498.092	Mo	-	8	-
2504.275	Th	8	6	-	2500.838	Ru	30	-	-	2498.044	V	7	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2497.963	Ge I	8	10	-	-	2495.077	Cr I	35	-	-	-	2491.591	Ta	10	-	-	-
2497.922	Pt II	-	3	-	-	2495.04	Cs	-	[20]	-	Bs	2491.59	Mo	-	-	4 h	-
2497.863	Mo	20	15	-	-	2494.90	Ta	2	-	-	-	2491.558	Ru	-	-	15	-
2497.85	Al II	-	[8]	Sy	-	2494.89	Cu I	2 wh	-	-	-	2491.48	Zn I	100	-	50	Fl
2497.820	Fe II	15	50	-	-	2494.828	W II	7	4	-	-	2491.413	Pt II	-	-	2	Sh
2497.817	Ni II	-	5	-	-	2494.77	U	-	8 h	-	-	2491.390	Fe II	-	-	30	-
2497.780	Mn	-	3 h	-	-	2494.733	Be I	30	20	-	-	2491.348	Cr I	30	-	1	-
2497.77	Hg	-	3	-	Cn	2494.71	I	-	[100]	Bl	-	2491.338	Ru	-	-	4	-
2497.733	B I	500	400	-	-	2494.689	Mo	1	6	-	-	2491.317	U	5	-	2	-
2497.720	Sn	8	-	-	m	2494.67	Te	-	[15]	Bl	-	2491.24	Au I	10	-	5 h	-
2497.717	Fe II	1	3	-	-	2494.64	Th	4	2	-	-	2491.236	Re	2	-	-	-
2497.678	Ru	50	1 h	-	-	2494.64	Lu	-	6	Me	-	2491.187	Ni	20	-	-	-
2497.66	Ca	-	5	-	-	2494.576	Be I	25	-	-	-	2491.183	W	-	-	5	-
2497.655	V I	4 h	-	-	Me	2494.559	Be I	30	-	-	-	2491.16	Cd I	3	-	[2]	Fl
2497.59	Th	3	12 h	-	-	2494.481	Ru	50	60	-	-	2491.156	Mn	100	-	2	-
2497.580	Mo	30 h	-	-	-	2494.40	U	2	2	-	-	2491.155	Fe I	150 R	-	10	-
2497.501	Co	1	40	-	-	2494.400	Mn	15	-	-	-	2491.099	Ru	10	-	40	-
2497.484	W II	10	15	-	-	2494.37	Hf II	1	5 h	-	-	2491.06	A	-	-	[5]	Rt
2497.42	Br	-	[2]	-	Bl	2494.250	Fe I	10	-	-	-	2491.021	Os	8 w	-	8	-
2497.42	Kr	-	[2 h]	-	Me	2494.12	Hg	-	[2]	Dj	-	2490.988	Cb	-	-	10 Wh	Me
2497.376	Mo	-	15	-	-	2494.109	Fe II	-	2	-	-	2490.93	Tm	6	-	6	Me
2497.328	P II	-	[100]	Ri	-	2494.089	Ru	8	6	-	-	2490.928	U	8	-	4	-
2497.300	Fe II	-	15	-	-	2494.022	Ru	80	-	-	-	2490.918	Mn	-	-	10 h	-
2497.292	W	5	1	-	-	2494.02	N II	-	[3]	Fl	-	2490.861	Fe II	-	-	15	-
2497.26	Th	-	10 h	-	-	2493.999	Fe I	20	1	-	-	2490.848	Cb	-	-	20 wh	-
2497.20	In	-	3	-	Sq	2493.933	Co	30 w	1	-	-	2490.843	W	9	-	-	-
2497.10	O	-	[8]	-	Mh	2493.91	Ti I	10 R	-	-	Fl	2490.84	Se	-	-	[35]	Bl
2497.099	V I	2	-	-	Me	2493.75	O	-	[50]	Mh	-	2490.800	Cr	-	-	2 wh	-
2497.059	Na	-	[5]	-	-	2493.72	U	-	4	-	-	2490.770	Rh	100	-	1000 wh	-
2497.02	Mo	-	8	-	-	2493.716	Zr	6 r	-	-	-	2490.76	Xe II	-	-	[10]	Hu
2497.01	I	-	[20]	-	Bl	2493.693	Ru	20	80	-	-	2490.733	Na I	3 R	-	-	Fl
2497.002	V	-	6	-	Me	2493.63	Yb	1	4	Me	-	2490.728	Fe II	1	-	10	-
2496.991	Fe	20	1	-	-	2493.616	Os	8 s	1	-	-	2490.710	W II	3	-	5	-
2496.986	Hf II	30	40	-	-	2493.582	V	1	25	-	-	2490.700	Ni	40	-	-	-
2496.973	Cb	1	3	-	-	2493.541	W	-	5	-	-	2490.644	Fe I	200 R	-	10	-
2496.957	Ta	2	-	-	-	2493.393	W	10	2	-	-	2490.643	Mn	125	-	3	-
2496.914	Ce	-	2	-	-	2493.33	O	-	[35]	Mh	-	2490.62	Dy	3	-	-	-
2496.9	Cs	-	[2]	-	Bs	2493.32	Zn I	25	-	-	Fl	2490.605	W	-	-	8	-
2496.88	N II	-	[25]	-	Fl	2493.3	bh C	12	-	-	L	2490.531	Ru	-	-	4	-
2496.846	Ru	-	9	-	-	2493.300	Cr	-	2	-	-	2490.492	W	8	-	-	-
2496.78	Hg	-	3	-	Cn	2493.295	Hg	-	[3]	Ps	-	2490.45	Yb	1	-	20	Me
2496.778	B I	300	300	-	m	2493.261	Fe II	10	100	-	-	2490.44	As	-	-	2	Ro
2496.768	Sn	10	-	-	Ar	2493.26	Er	2	1	-	-	2490.42	Yt I	20	-	3	-
2496.70	Re	20	-	-	-	2493.180	Fe II	10	100	-	-	2490.394	Co	5	-	80	-
2496.686	Pd II	-	100	-	-	2493.159	W	7	-	-	-	2490.38	Au	-	-	5 h	-
2496.638	W II	10	20	-	-	2493.152	Na II	-	[40]	Fr	-	2490.37	N II	-	-	[8]	Fl
2496.635	Ta	20	-	-	-	2493.080	Ir I	20	5	-	-	2490.36	Tb	-	-	10	Ex
2496.533	Fe	40	15	-	I	2493.022	Cb	-	20 wh	-	-	2490.33	Te	-	-	[15]	Bl
2496.533	Cd II	-	4	-	-	2493.00	Ca	-	7	-	Ad	2490.261	W	-	-	7	-
2496.480	Zr II	2	5	-	-	2492.934	W II	6	25	-	-	2490.213	Cb	1	-	15	-
2496.40	Gd	2	1	-	-	2492.91	As I	25	5	Ro	-	2490.125	Pt I	300	-	20	-
2496.333	In II	-	[18]	-	Ps	2492.889	Cr	-	4	-	-	2490.107	Cb	-	-	10	-
2496.309	Cr I	125 r	2	-	-	2492.847	Re	20	-	-	-	2490.088	Cr	-	-	4	-
2496.271	Ir I	10	2	-	-	2492.75	Cl	-	[3]	An	-	2490.02	Mo	-	-	10 h	-
2496.237	Ta	2 h	2 h	-	-	2492.720	Mn	-	8	-	-	2489.915	W	2	-	7	-
2496.215	In II	-	[10]	-	Ps	2492.705	Ir	2 h	-	-	-	2489.912	Ru	60	-	-	-
2496.071	Fe	4	-	-	-	2492.646	Cr	-	6	-	-	2489.822	Fe II	1	-	50	-
2496.06	Mo	-	5 h	-	-	2492.644	Fe I	3	-	-	-	2489.782	U	12	-	15	-
2496.05	Se	-	[100]	-	-	2492.64	Au II	-	5	-	-	2489.751	Fe I	200 R	-	2	-
2496.04	Cl II	-	[20]	-	Bl	2492.568	Cr I	50	-	-	-	2489.718	W	8	-	2	-
2496.003	P II	-	[50]	-	Ri	2492.56	Se	-	[6]	Ro	-	2489.652	Cu II	3	-	50	IBu
2495.97	In	-	2	-	-	2492.552	Re	15	-	-	-	2489.64	Th	5	-	3	-
2495.951	Rh	2	50	-	-	2492.531	Pt II	-	3	-	-	2489.611	Pd II	-	-	75	-
2495.938	W	4	-	-	-	2492.367	W	12	8	-	-	2489.510	W II	2	-	8	-
2495.9	Rb	-	[20]	-	Dr	2492.367	Os	50 r	8 r	-	-	2489.507	Ni I	40	-	6	-
2495.863	Fe I	25	35	-	-	2492.337	Fe II	-	30	-	-	2489.5	Cs	-	-	[2]	Bs
2495.817	Pt I	40	10	-	-	2492.321	Ir I	2	-	-	-	2489.486	Fe II	1	-	40	-
2495.79	Si	-	[2]	-	Sy	2492.313	U	3	2	-	-	2489.47	Br	-	-	[3]	Bl
2495.788	V I	6	6	-	-	2492.299	Rh I	100	10	-	-	2489.463	Cb	1	-	3	-
2495.77	U	-	8 h	-	-	2492.172	Ta	15	2	-	-	2489.46	Tm	2	-	100	Me
2495.73	Cd II	-	[30]	-	Tk	2492.15	Br	-	[2]	Bl	-	2489.4	Bi	8 h	-	2	Om
2495.722	W	4	9	-	-	2492.146	Cu I	200 r	50	-	-	2489.39	Kr II	-	-	[8 h]	-
2495.719	Sn	100	100	-	-	2492.09	Hg II	-	[10 h]	Ps	-	2489.336	Ru	-	-	40	-
2495.694	Ru	80	35	-	-	2492.011	Ta	5	2	-	-	2489.293	Cr	-	-	10	-
2495.69	Yb	-	5 h	-	Me	2491.994	W	6	1	-	-	2489.280	Os	10	-	10 h	-
2495.6	Ti	-	2	-	Cx	2491.984	Fe	10	-	-	-	2489.24	Ho	-	-	10	Ex
2495.58	Pb	-	2	-	Sx	2491.855	Rh	2	400 h	-	-	2489.233	W II	10	-	20	-
2495.518	W	-	8	-	-	2491.78	Xe II	-	[3]	Hu	-	2489.204	Ir I	2	-	1	-
2495.353	Th	8	4	-	-	2491.776	Ru	30	-	-	-	2489.20	Te	-	-	[10]	Bl
2495.292	Ir	4	-	-	-	2491.768	W	1 h	5	-	-	2489.11	Xe II	-	-	[25]	Hu
2495.291	U	2	4 h	-	-	2491.72	Sn	12 wh	5 w	-	-	2488.96	Yb	-	-	3	Me
2495.274	Zr	9	-	-	-	2491.69	Yb	-	3	Me	-	2488.951	In II	-	-	[60]	Ps
2495.264	W	20	5	-	-	2491.689	Os	10	3	-	-	2488.950	Fe	10	-	1	-
2495.17	Hf	-	60	-	Me	2491.61	I	-	[40]	Bl	-	2488.921	Pd II	10	-	30	-
2495.17	Br	-	[15]	-	Bl	2491.60	Tm	12	5	Me	-	2488.910	W	10	-	3	-

2488.8—2479.0 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2488.88	Pt	-	25	-	2485.775	P II	-	[2]	Ri	2482.212	W	10	3	-
2488.82	N II	-	[3]	Fl	2485.62	Gd	2	1	-	2482.176	Ru	20	-	-
2488.771	W	10	20	-	2485.597	Zr II	2	3	-	2482.17	A II	-	[5]	Rt
2488.75	Pr	-	30	-	2485.49	Cr	-	2 h	-	2482.147	Mn	-	8 w	-
2488.747	Cb	-	40	-	2485.490	V	-	4	Me	2482.130	V I	35	-	-
2488.74	Cl	-	[5]	An	2485.473	W	-	6	-	2482.115	Fe II	3	50	-
2488.736	Pt	10	25	-	2485.42	Cs	-	[20]	Bs	2482.098	W	10	3	-
2488.696	Ta	200	150	-	2485.418	Cb	1	12	-	2482.05	I	-	[20]	Bl
2488.69	Cd II	-	[2]	Tk	2485.412	Ir I	6	1	-	2482.044	Rh	25	3	-
2488.666	In II	-	[40]	Ps	2485.382	Br	-	[3]	Bl	2482.042	Pt II	2	25	-
2488.620	V	-	7	-	2485.38	Br	-	-	-	2482.008	Hg I	30	5	Cn
2488.577	Ru	-	15	-	2485.356	Co II	25	75	-	2481.983	P II	-	[10]	Ri
2488.556	In II	-	[18]	Ps	2485.35	Al II	-	[3]	Sy	2481.884	W	-	5	-
2488.548	Os I	50 w	15	-	2485.313	Mo	30 h	-	-	2481.865	Pd	-	6	-
2488.460	Mn	-	12	-	2485.24	Te	-	[10]	Bl	2481.86	Ta	2 h	10	-
2488.412	Pd II	-	10	-	2485.205	W	3	4 d	-	2481.859	Ru	-	5	-
2488.397	Ta	60	-	-	2485.17	Pr	-	4	-	2481.814	Mo	50 h	-	-
2488.37	Br	-	[40]	Bl	2485.16	Al	-	[3]	Sy	2481.791	Os	10 s	1	-
2488.29	Br	-	[2]	Bl	2485.12	Dy	2	-	-	2481.736	Sb	15	5	-
2488.284	Ir	-	5	-	2485.096	U	3	2	-	2481.72	Lu	20	100	Me
2488.236	Cb	2	10	-	2485.075	Fe II	-	2	-	2481.574	Fe II	-	15	-
2488.207	Ta	5	-	-	2485.056	Mn	-	5	-	2481.54	W II	-	10	-
2488.148	Fe I	600 R	100 r	-	2484.954	Ta	30	-	-	2481.517	Ti II	2	4	-
2488.145	Mn	150	12	-	2484.932	Cb	2	25	-	2481.50	Al	-	[5]	Rt
2488.118	W II	2	12	-	2484.891	U	6	2	-	2481.443	W	25	3	-
2488.096	Ru	3	-	-	2484.88	Yb	2	5	Me	2481.44	Tb	-	10	Ex
2487.96	Lu	-	4	Me	2484.753	Mo	2	20	-	2481.438	Hf II	6	10	-
2487.940	W	3	-	-	2484.735	W	20	6	-	2481.43	Zr	6	-	-
2487.937	Cd II	-	15	-	2484.671	U	2	12	-	2481.40	Yb	1	3	Me
2487.9	Sn	-	10 w	Ar	2484.666	Ru	-	8	Bl	2481.362	Zr II	2	4	-
2487.90	Tb	-	10	Ex	2484.64	I	-	[20]	-	2481.22	Te	-	[10]	Bl
2487.857	U	4	2	-	2484.556	Fe II	-	10 h	-	2481.191	Mo	10	30	-
2487.804	Pd II	-	2 h	-	2484.5	bh C	12	-	L	2481.187	Pt	2	1	-
2487.766	W	10	-	-	2484.4	Rb	-	[5]	Dr	2481.183	Ir I	50	10	Dj
2487.668	Mo	3	10 h	-	2484.398	W	2	15	-	2481.18	Hg	-	[5]	-
2487.64	Ta	5	2	-	2484.327	Ni II	-	50 wh	-	2481.15	Tm	15	7	Me
2487.62	Kr II	-	[4]	Me	2484.25	Ir	-	10 h	-	2481.132	V	12	-	-
2487.60	U	2	-	-	2484.236	Fe II	-	20	-	2481.111	Ru I	12	80	-
2487.588	La II	-	40	-	2484.217	U	10	15	-	2481.09	I	-	[12]	Bl
2487.532	V I	6	4	-	2484.187	Fe I	100 R	5	-	2481.049	Fe II	-	40	-
2487.53	Tm	15	10	Me	2484.152	P II	-	[20]	Ri	2481.033	U	2	2	-
2487.50	Kr II	-	[3]	Me	2484.034	Ni I	18	-	-	2480.954	Mn	-	10	-
2487.492	W	15	5	-	2484.01	Pd	-	[2]	Bx	2480.949	W	20	3	-
2487.48	Tl I	5 R	-	Fl	2484.008	U	15	4	-	2480.92	Dy	5	-	-
2487.470	Rh	100	8	-	2484.003	W II	2	15	-	2480.87	A	-	[10]	Rt
2487.42	Co II	10	20	-	2483.972	Ru	30	18	-	2480.808	Ru	-	12	-
2487.367	Fe I	6	2	-	2483.918	Re	150	-	-	2480.7	Cs	-	[2]	Bs
2487.288	Zr II	20	20	-	2483.882	Cb	3	80	-	2480.654	W	10	2	-
2487.23	Re	50	-	-	2483.829	Hg I	30	5 h	Cn	2480.630	V I	25	-	-
2487.228	W	-	4	-	2483.74	Se	-	[2 h]	Bl	2480.62	Hg	-	[40]	Ps
2487.200	Ru	-	4	-	2483.726	W II	2	7	-	2480.61	Ho	-	10	Ex
2487.168	Pt I	600 r	20	-	2483.723	Fe II	-	25	-	2480.589	Ir	2	1	-
2487.16	Hf	5	-	Me	2483.717	Cb	2	10	-	2480.442	Sb	25	9	-
2487.064	Fe I	25	10	I	2483.648	V	10	-	-	2480.44	Rh	2 w	25 w	-
2486.99	Sn II	-	[30]	Mc	2483.612	Co I	-	25	-	2480.407	Ag II	-	15 h	-
2486.989	Pt II	6	10	-	2483.599	W	-	4	-	2480.28	Au	-	15 h	-
2486.975	Mn	-	5	-	2483.535	Fe I	1	-	-	2480.25	Bi II	-	3	MI
2486.780	W	-	5	-	2483.457	W	-	4	-	2480.176	Zr II	-	2	-
2486.776	Re	50 w	-	-	2483.403	Sn II	125	125	-	2480.174	Bi II	-	2	-
2486.747	Ir I	2	1	-	2483.367	Pt	40	5	-	2480.158	Fe II	10	80	-
2486.72	Ag II	-	4 h	-	2483.333	Rh I	100 r	-	-	2480.13	Tm	60	20	Me
2486.705	Ta	20	-	-	2483.33	Hf II	6	5	-	2480.126	W	25	10	-
2486.693	Fe	30	3	-	2483.29	Si	-	[2]	Sy	2480.11	Ra II	-	[12]	Rs
2486.681	Cr	-	4	-	2483.270	Fe I	500 rh	50	-	2480.04	Si	-	[2]	Sy
2486.528	Pd II	5	30	-	2483.227	W	1	4	-	2480.03	Bi II	-	5	MI
2486.5	air	-	3	-	2483.073	Cr	-	6	-	2480.0	Rn	-	[3]	Pe
2486.44	Co II	1	40	-	2483.070	V	20	150	m	2479.938	Cb	3	50	Bl
2486.425	W II	-	10	-	2483.0	Cs	-	[2]	Bs	2479.85	Te	-	[5]	-
2486.371	Fe	40	-	-	2483.00	La II	-	2 h	-	2479.84	La II	-	10	-
2486.371	Ir I	2	1	-	2482.776	Ru	-	15	Sy	2479.825	Cr	-	2	-
2486.345	Fe II	-	80	-	2482.76	Ga I	-	[15]	-	2479.776	Fe I	200 R	30	-
2486.32	Hg	-	[3]	Ps	2482.734	Rh	2	100	-	2479.756	Rh	6	-	-
2486.318	Cr	-	8	-	2482.721	Hg I	25	10	Cn	2479.74	Zn I	30	-	Fl
2486.300	W	15	2 h	-	2482.711	V	20	-	Me	2479.624	Fe	7	-	-
2486.28	Si	-	[5]	Sy	2482.69	W	-	3	-	2479.522	V	15	150	-
2486.244	Os	8 h	15 h	-	2482.662	Mn	-	2	-	2479.481	Ni	8	-	-
2486.163	Mn	-	20	-	2482.654	Fe II	1	50	-	2479.476	Fe I	8	3	-
2486.15	In II	-	[40]	Ps	2482.577	Ta	50	50	-	2479.359	Ru	20	-	-
2486.028	Cb	-	20 wh	-	2482.572	Mo	5	25	Bl	2479.31	Mo	-	8	-
2485.985	Fe	10	1	-	2482.57	Br	-	[3]	-	2479.165	Ir	2	1	-
2485.817	Rh	2	50	-	2482.541	Ru	30	-	-	2479.134	Cr	20	-	-
2485.809	Re	50	-	-	2482.427	Os	12 w	2	-	2479.13	W	-	12	-
2485.787	Cu II	5	50	-	2482.35	Se	-	[5]	Bl	2479.115	Pd II	-	5 h	Dn
2485.779	W	-	10	-	2482.341	Cu	-	20	-	2479.08	A II	-	[5]	Rt
2485.775	Ag II	1	10 h	-	2482.326	Fe	-	6	m	2479.050	V	15	150	m
					2482.310	V	6	12	-					

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2478.988	Re	5	-	2476.04	Hf II	1 h	2 wh	2472.95	Al II	-	[3] Sy
2478.928	Ru	80	60	2476.04	Au	-	5 h	2472.942	Ir	5 h	3 h
2478.872	W II	-	8	2476.029	Fe	20 h	-	2472.919	Ag II	-	25 h
2478.85	Kr II	-	[3]	2476.017	W	7	-	2472.909	Fe I	1000	-
2478.82	Xe	-	[2]	2475.905	Pd	-	2 h	2472.894	Mn	125	100
2478.802	Pd II	-	15 h	2475.89	Xe	-	[50] Hu	2472.880	Fe I	300 R	25
2478.66	Hg I	15 h	15 h	2475.887	Cb	-	25 h	2472.865	V	7	40
2478.646	Ti II	-	50	2475.870	V	-	60	2472.86	Cr	-	5
2478.621	V	2	20	2475.837	W	-	8	2472.830	Ru	-	8
2478.594	Pb	-	2	2475.695	Cr	-	12	2472.82	Se	-	[35] Bl
2478.59	Cr	-	3 w	2475.586	W	1	20	2472.724	W	-	4
2478.573	C I	400	[400]	2475.565	In	-	12	2472.66	Cl	-	[4] Bl
2478.57	Tm	15	15	2475.548	Fe II	-	10 h	2472.623	Ir I	3	-
2478.569	Fe II	4	40	2475.533	Na I	2 R	-	2472.57	Ti I	5 R	-
2478.566	Cb	-	4 wh	2475.5	Tl	-	10	2472.512	Pd II	-	150
2478.565	Pd	-	25	2475.50	Ra II	-	[125] Rs	2472.51	Rh	40 w	4 w
2478.563	Hf II	100	300 wh	2475.48	A II	-	[5] Rt	2472.508	W	15	5
2478.448	Fe II	-	5 h	2475.460	Mn	-	3	2472.435	Ru	-	5
2478.399	Ru	8	5 wh	2475.460	V	2	60	2472.43	La II	-	10
2478.315	W	-	10	2475.45	S	-	[8] Bl	2472.430	Fe II	-	15
2478.311	Sb	75	100	2475.406	Ru	100	3	2472.378	Cb	4 d	25
2478.290	Cb	4	8	2475.34	Lu	-	3	2472.344	Fe I	30	5
2478.22	P	-	[10]	2475.332	Ta	12	8	2472.31	Hg	-	[5] Dj
2478.219	Ta	60	-	2475.328	Th	-	15	2472.281	Os	15 s	4
2478.219	Mo	-	4	2475.29	Li I	100 w	5	2472.229	Ni I	5	1
2478.207	Co	4	20	2475.260	Al II	-	[30] Sy	2472.21	Ho	-	10
2478.116	Fe II	-	20	2475.23	Cd I	-	[2] m	2472.134	Ta	80	-
2478.109	Ir I	6	1	2475.180	V	3	2	2472.124	W	5	-
2478.066	Zr	3	-	2475.172	Re	25	-	2472.106	Fe	9	-
2478.04	I	-	[12]	2475.122	Ir I	100	10	2472.072	Fe II	-	25
2478.010	U	4	8 h	2475.091	W	10	2	2472.065	Ni I	15	-
2477.990	Mo	-	5	2475.025	U	6	2	2472.0	Rb	-	[20] Dr
2477.945	Cb	2	10	2474.973	Mn	-	15	2471.967	Mo	50 h	2
2477.932	Ru	10	2 h	2474.948	Cr	-	2	2471.95	Zr	3	-
2477.796	W II	15	30	2474.91	Tb	-	10	2471.9	Rn	-	[3] Pe
2477.77	P	-	[10]	2474.814	Fe	40	50	2471.900	La II	-	20
2477.71	Au II	-	15	2474.812	Cb	2	30 h	2471.768	Rh	3	100
2477.58	Cs	-	[20]	2474.771	Na	-	[2] Fr	2471.744	W	1	15
2477.567	Mo	2	50	2474.765	Fe II	-	60	2471.597	Sr II	8	5
2477.565	Pd	-	5 h	2474.748	Ru	-	6	2471.487	Ru	30	-
2477.535	Rh	6	10 wh	2474.727	Re	25	-	2471.472	Rh I	70	8
2477.480	Fe II	-	1	2474.709	Mo	20	2 h	2471.463	W	-	4
2477.477	Co	1	20	2474.69	Kr II	-	[2 h] Me	2471.448	W I	2	1
2477.46	Pd II	-	[6]	2474.663	Cb	5 h	2	2471.41	Dy	3	-
2477.40	Ti II	-	[20]	2474.617	Ta	150	1	2471.383	Ta	20	-
2477.384	Cb	5	200	2474.584	Sb	25	10	2471.34	Ag	-	2 h
2477.338	Fe II	1	40	2474.51	La II	-	3	2471.317	Cb	2 w	12 w
2477.284	Ag II	-	150 wh	2474.484	W	6	3	2471.26	Tm	-	6
2477.271	W	-	12	2474.45	Tm	-	6	2471.243	Ta	2	-
2477.257	Ru	-	40 r	2474.407	Ru I	12	-	2471.209	W	10	-
2477.206	Ti II	3	5	2474.24	Mo	-	10 h	2471.152	Pd II	-	150
2477.190	Rh	2	8	2474.2	K	-	[10] Sg	2471.124	V	-	40
2477.178	U	8	2	2474.194	Ti II	4	8	2471.12	Eu	4 h	-
2477.13	Cu	-	2 w	2474.19	Gd	2	1	2471.06	La II	-	5
2477.005	Pd II	-	25	2474.186	Cb	-	3 h	2471.018	Ru	-	4 h
2476.97	Tm	5	1	2474.149	W	20	10	2471.01	I	-	[12] Bl
2476.96	Th	6	2	2474.140	Zr	3	-	2471.007	Pt I	100	20
2476.922	Cr	-	4	2474.10	Hf II	2	2 h	2470.996	Ti I	15	-
2476.876	Ru	60	2	2474.077	Ir	2	1 h	2470.966	Fe I	25	1
2476.874	Ni I	40 W	2	2474.072	Cr	35	-	2470.897	Ta	60	40
2476.861	Fe I	3	-	2474.036	Ru	50	1 Wh	2470.803	W II	5 d	20
2476.836	Os	25	8	2474.02	A	-	[5] Rt	2470.752	Fe II	-	3
2476.810	W	5	-	2474.010	Zr	6	-	2470.715	Ru	12	-
2476.75	La	-	30 h	2473.98	Th	-	15	2470.658	Fe II	8	50
2476.740	Ag II	-	2 wh	2473.954	W	-	2	2470.645	U	12	4
2476.67	Ta	20	6	2473.915	Hf II	15	25	2470.61	Cd II	-	[50] Tk
2476.654	Fe I	15	25	2473.818	W	7	-	2470.597	Th	6	4
2476.641	Co I	40 w	25	2473.800	Ag II	20	150 h	2470.55	La II	-	3
2476.57	Pd	-	[20]	2473.76	Ho	-	10 h	2470.517	Ru	20	18
2476.508	V I	4 h	-	2473.720	Re	5	-	2470.45	Kr	-	[10 h] Me
2476.479	Cb	4	-	2473.692	W	4	-	2470.428	Re	5	-
2476.474	U	2	8 h	2473.657	Mn	-	10 wh	2470.406	Fe II	1	40
2476.418	Pd I	300 r	50	2473.577	Ru	-	5	2470.4	K	-	[10] MI
2476.379	Pb	150 wh	25	2473.532	Pd	-	2 h	2470.391	Rh I	70	5
2476.329	Ta	2	-	2473.332	Cu II	5	20	2470.276	Co	20 w	8
2476.308	Ru	50	-	2473.321	Fe II	1	4	2470.254	W	-	7
2476.30	Al II	-	[30]	2473.312	Ta	15 h	1 h	2470.18	Xe II	-	[3] Hu
2476.295	V	-	12	2473.279	Zn II	-	8 wh	2470.067	Os	-	2
2476.278	Re	15	-	2473.222	W	1	10	2470.06	Fe	6	-
2476.268	W	-	3	2473.18	Br	-	[5] Bl	2470.060	Ir I	2	1
2476.267	Fe II	-	35	2473.156	Fe	5	-	2470.043	Mo	1	25
2476.24	Ag II	-	2 wh	2473.151	Ni II	80	500	2470.011	Pd II	-	150
2476.162	Ba	-	5 w	2473.13	Ta	20	8	2469.92	Ho	-	10
2476.149	Ru	-	3	2472.990	W	-	5	2469.884	W	-	5
2476.06	Tb	-	10	2472.982	Cb	-	3 h	2469.84	Cd II	-	[500] Tk

2469.8—2460.6 Å.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2469.834	Fe	-	8	-	2469.848	W	15	7	-	2463.816	Ta	20 w	30	-
2469.77	Pd II	-	[6]	Bx	2469.83	Nd	-	5	-	2463.728	Cb	1	5 h	-
2469.76	Ti	-	30	Sd	2469.818	Fe II	1	30	-	2463.728	Fe I	15	7	-
2469.76	Ta	3	-	Ks	2469.8	Cs	-	[2]	Bs	2463.7	bh C	12	-	L
2469.75	Se	-	[5]	Bl	2469.727	Cb	10	2	-	2463.693	Th	-	25	-
2469.684	Ru	3	12	-	2469.680	Fe II	1	10	-	2463.688	W	2	1	-
2469.62	Te	-	[300]	Bl	2469.678	Mo	5	25	-	2463.637	Cb	3	2	-
2469.562	Ag	-	4	-	2469.63	Cr	-	5 wh	-	2463.609	Rh	30	2	-
2469.512	Fe	2	40	-	2469.62	Yb	1	5	-	2463.507	Fe	5	-	-
2469.51	Ir	-	10	-	2469.60	Xe	-	[3]	Hu	2463.496	W	-	5	-
2469.46	Xe	-	[3]	Hu	2469.562	Cb	1	5	-	2463.47	Zn I	20	2	Fl
2469.412	Cb	1	80	-	2469.53	Ho	-	10	Ex	2463.44	Rh	2	150	-
2469.408	Mn	10	-	-	2469.524	W II	12	20	-	2463.4	Rn	-	[20]	Pe
2469.389	V	-	12	-	2469.472	In	-	2	-	2463.38	U	3	-	-
2469.38	Zn I	12 r	-	Fl	2469.419	Mn	-	40	-	2463.314	Re	25	-	-
2469.294	Mn	-	5	-	2469.334	W II	-	5	-	2463.278	Fe II	6	60	-
2469.27	Lu	10	40	Me	2469.313	Cb	4	1	-	2463.27	Kr II	-	[2]	Me
2469.254	Pd II	-	150	-	2469.3	Cs	-	[2]	Bs	2463.157	V	-	3	Me
2469.215	Ru	6	5 h	-	2469.28	Al II	-	[2]	Sy	2463.034	Ir I	4	1	-
2469.179	Hf	20	50	-	2469.211	Mn	-	50	-	2463.002	Mn	15	1	-
2469.16	Ti II	-	10	MI	2469.149	Rh	1	100	-	2462.989	W	3	-	-
2469.139	Cr	-	20	-	2469.126	Th	10	6	-	2462.941	V	-	7 h	-
2469.104	Mo	20	-	-	2469.957	W	-	12	-	2462.937	Ru	60	-	-
2469.080	Cb	10 h	2	-	2469.914	Fe II	7	100	-	2462.90	Pr	-	6	-
2469.07	Ti II	-	20	MI	2469.904	Yt II	2	10 hl	-	2462.892	Cb	8	3	-
2469.013	Pd	-	2	-	2469.776	Cr	-	3	-	2462.788	W	15	10	-
2468.98	Pr	-	5	-	2469.664	V	4 h	-	Me	2462.778	Mn	10	1	-
2468.95	Ti II	-	15	MI	2469.65	As	-	3	Ro	2462.644	Fe I	200 R	50	-
2468.95	Hg II	-	5 h	Nu	2469.641	W	-	20 d	-	2462.496	Cb	1 w	5 w	-
2468.944	Ir I	2	-	-	2469.577	Mo	15	-	-	2462.482	Mo	1	6	-
2468.898	Os	10	30	-	2469.46	Ti I	5 R	-	Fl	2462.478	W	-	5	-
2468.878	Fe	40	15	I	2469.458	Pd	-	2 h	-	2462.366	Cr	-	3	-
2468.83	Se	-	[10]	Bl	2469.455	Fe	15	-	-	2462.364	Ir I	3	1	-
2468.777	Mo	2	25	-	2469.395	Zr II	2	5	-	2462.35	Br	-	[3]	Bl
2468.740	Cb	-	50	-	2469.370	Ta	2	-	-	2462.33	Kr II	-	[2]	Me
2468.73	Hg	-	10 h	Dj	2469.320	Fe	3	-	-	2462.32	Ho	-	10 h	Ex
2468.664	W	-	5	-	2469.278	V	2	100	-	2462.236	Ag II	5	80 h	-
2468.653	V	-	15	-	2469.264	Ni I	20	5	-	2462.230	Ir I	2	2 h	-
2468.619	Ir I	2	-	-	2469.264	Ta	60	-	-	2462.180	Fe I	50 r	3	-
2468.584	Cu II	5	70	-	2469.204	W	12	20	-	2462.12	Co	20	1	-
2468.578	Ti I	3	-	-	2469.203	Cb	3	5	-	2462.050	Cb	1	100	-
2468.43	Xe	-	[3]	Hu	2469.200	Fe II	-	50	-	2462.045	W	-	3	-
2468.409	W	-	20 r	-	2469.162	Os	25	40	-	2462.0	Cs	-	[2]	Bs
2468.408	Ta	4 d	2 h	-	2469.148	Fe I	70	-	I	2461.93	Ti I	5 R	-	Fl
2468.369	Ti I	10	1	-	2469.089	Ir I	10	-	-	2461.89	Pd	-	2 h	-
2468.295	Fe II	1	30	-	2469.06	Hf II	10	15	-	2461.860	Re	80	-	-
2468.261	U	10	4	-	2469.995	Ru	-	4	-	2461.857	Fe II	15	70	-
2468.25	Cd I	2	[1]	Fl	2469.979	Ti I	10	1	-	2461.810	Mo	2	25	-
2468.22	Gd	1 h	2	-	2469.95	I	-	[12]	Bl	2461.795	Zr I	2	-	-
2468.22	Pr	-	15	-	2469.94	Tm	6	6	Me	2461.76	As	-	3	Ro
2468.176	Ir I	2	1	-	2469.903	Fe II	4	50	-	2461.757	Cb	5	-	-
2468.150	Th	6	4	-	2469.901	Ir I	5	1	-	2461.72	Hf	-	30	-
2468.106	Fe	2	-	-	2469.82	Lu	5	-	Me	2461.671	Fe II	-	2	-
2468.084	W	-	9	-	2469.81	Br	-	[15]	Bl	2461.572	W	12	6	-
2468.054	Ta	10	-	-	2469.77	Kr II	-	[100 h]	Me	2461.520	Ru	-	5 h	-
2468.04	Zr I	5	-	-	2469.769	Ru	-	6	-	2461.51	Pb	-	20	Sx
2468.031	Cb	2	3 h	-	2469.699	Ru	50	4	-	2461.495	V	-	40	Me
2468.023	In I	25 h	2 wh	Ps	2469.679	I II	-	[100]	Mu	2461.449	Ir I	2 h	-	-
2467.982	Mn	-	15	-	2469.648	Cb	1	15	-	2461.431	W	-	5	-
2467.971	Zr II	-	2 w	-	2469.63	Ho	-	10	Ex	2461.417	Os	50	10	-
2467.967	Hf II	15	10	-	2469.626	W II	3	20	-	2461.40	Yb	-	3 h	-
2467.92	Pd II	-	[2]	Bx	2469.501	Os	4	1	-	2461.30	N II	-	[15]	Fl
2467.91	Tm	3	8	Me	2469.49	Yb	5	2	-	2461.279	Fe II	5	50	-
2467.767	Ir	2	-	Ab	2469.432	Cb	5	1	-	2461.277	Ag II	-	8 h	-
2467.730	Fe I	10	2	-	2469.397	Na I	2 R	-	Fl	2461.25	Ta	2	-	-
2467.72	Te	-	[50]	Bl	2469.365	Ru I	12	-	-	2461.209	Ir	2	8 h	-
2467.702	Re	3	-	-	2469.351	Ir	2	2	-	2461.179	Re	125	-	-
2467.691	Co I	20 w	3	-	2469.307	W	15	2	-	2461.175	Cb	2 w	8 w	-
2467.668	Th	-	10 h	-	2469.195	Co II	40	150	-	2461.144	W	-	12	-
2467.628	W	3	-	-	2469.19	Hf II	30	100	-	2461.128	I II	-	[60]	Mu
2467.593	Pt II	5	100	-	2469.128	W	3	5	-	2461.07	In II	-	[5]	Ps
2467.578	Ru	30	-	-	2469.096	V	-	25	-	2461.065	Ta	2 d	2 dh	-
2467.52	Hg	-	[20]	Dj	2469.068	Hg I	15	15	-	2461.056	Fe	20	-	Bu
2467.51	Ir	-	3 h	-	2469.04	U	-	10	-	2461.036	Rh	80	200 wh	-
2467.443	Pt	800 R	100	-	2469.007	Fe II	5	80	-	2461.03	Zr	5	-	-
2467.368	Ta	15 s	3	-	2469.007	Mn	-	10 h	-	2461.011	Mn	25	5	-
2467.345	Mo	5	20	-	2468.997	Ti II	1	12	-	2460.890	W	7	-	-
2467.314	Ru	2	5	-	2468.98	I	-	[12 h]	Bl	2460.887	Mn	25	3	-
2467.302	Ir I	40	5	-	2468.972	Ru	5	-	-	2460.86	U	4	2	-
2467.228	Rh	-	50	-	2468.97	Se	-	[10]	Bl	2460.806	Co I	20	3	-
2467.06	Co	2	80	-	2468.970	Pd	-	15 h	-	2460.73	Pr	-	12	-
2466.990	Ta	20	2	-	2468.967	Hf II	15	15	-	2460.717	Ru	20	5	-
2466.968	Mo	10	20	-	2468.954	W	2	15	-	2460.713	Ir I	2 h	-	-
2466.958	Ni I	40 W	-	-	2468.95	Lu	-	3	Me	2460.70	Er	3	4 w	-
2466.85	Sm	4	10	-	2468.89	As	-	3	Ro	2460.653	Fe	-	5 h	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2460.62	Yt II	10		30 h	-	2457.68	Cu	-		2 W	-	2454.468	Cr	-		8	-
2460.596	Fe	15	-	-	-	2457.6	Rn	-		[12]	-	2454.46	I	-		[20]	Bl
2460.551	Ta	50	-	-	-	2457.595	Fe	70		30	I	2454.42	Ho	-		10 h	Ex
2460.55	Ra II	-		[50]	Rs	2457.56	Lu	-		5 h	Me	2454.378	Cb	-		3	-
2460.493	Hf II	20		50	-	2457.450	V	-		35	-	2454.367	U	10		4	-
2460.47	Eu	2 h	-	-	-	2457.436	Zr II	20		20	-	2454.36	Ce	-		12	a
2460.453	Fe II	1		15 h	-	2457.404	Mo	15	-	-	-	2454.27	A	-		[10]	Rt
2460.440	Cr	-		6	-	2457.27	I	-		[20]	Bl	2454.266	Mo	5		5	-
2460.422	Ru	-		5	-	2457.260	Pd II	2		10	-	2454.236	Zr II	2 h		3	-
2460.402	Cb	-		200 W	-	2457.245	Cb	-		15 wh	-	2454.235	Ru	2		5 h	-
2460.394	W	-		8	-	2457.227	Ir I	10		3	-	2454.22	Ag II	-		[2 h]	Bx
2460.328	U	5		2	-	2457.20	Al II	-		[3]	Sy	2454.212	Ta	50		-	-
2460.31	Ag II	-		80 wh	-	2457.181	Ru	10		12	-	2454.163	Fe II	-		7	-
2460.31	Fe	7		-	-	2457.18	W	-		12	-	2454.120	Ir I	4		1	-
2460.24	Yb	3		15	-	2457.166	U	3		4 h	-	2454.088	Mo	8 h		-	-
2460.240	Re	25		-	-	2457.030	Ir I	12		2	-	2454.063	Cr	-		2	-
2460.206	Co	20		-	-	2457.02	Pd	-		[3]	Bx	2453.987	Ni I	40 W		8	-
2460.19	In	-		[5 wh]	Ps	2456.996	Cb	1		200	-	2453.979	Hf II	5		8	-
2460.166	Ru	-		5	-	2456.949	Ru	10	-	-	-	2453.975	Fe II	-		3 h	-
2460.162	W	12		5	-	2456.90	Te	-		[5]	Bl	2453.946	Cb	2		20	-
2460.10	Yt I	8		-	-	2456.877	W	-		6	-	2453.939	Ru	10		25	-
2460.079	In I	10 wh	-	-	Ps	2456.86	Th	4		2	-	2453.895	Os	12		3	-
2460.00	Dy	2		-	-	2456.819	Fe II	-		20	-	2453.89	Be II	-		[6]	Ps
2459.97	A II	-		[5]	Rt	2456.769	Ir	2		-	-	2453.859	Cb	2		10	-
2459.923	B II	-		2	-	2456.675	Cb	1 w		5 w	-	2453.855	In II	-		[18 h]	Ps
2459.878	W II	-		15	-	2456.641	Fe II	-		15	-	2453.82	U	2		2	-
2459.86	Cl II	-		[10]	Ks	2456.568	Ru	60		50	-	2453.80	Mo	-		3	-
2459.842	Zr I	5		-	-	2456.54	Zr I	3		-	-	2453.796	Fe II	1		10	-
2459.82	Al II	-		[30]	Sy	2456.531	W	15		5	-	2453.79	Tl I	5 R		-	Fl
2459.761	Mo	1		30	-	2456.53	As I	100 r		8	Me	2453.722	W	-		12	-
2459.75	Cl	-		[6]	An	2456.462	Os	12 a		3	-	2453.659	Mn	-		15 wh	-
2459.702	Pd	-		2 h	-	2456.45	Tl I	5 R		-	Fl	2453.53	Hg II	-		2	Nu
2459.698	Mn	5		-	-	2456.438	Ru	60		50	-	2453.474	Fe	20		3	I
2459.64	Lu	3		8	Me	2456.292	Th	6		4	-	2453.474	Pd II	-		3	-
2459.607	W II	5		8	-	2456.268	Pd	-		2	-	2453.373	Cb	4		2	-
2459.579	Ta	10		-	-	2456.237	Co I	20 w		7	-	2453.351	V	2		40	-
2459.564	Cb	1		5	-	2456.229	W	8		-	-	2453.338	Hf II	12		25	-
2459.49	Co	1		30	-	2456.180	Rh	5		150	-	2453.333	Mo	10		6	-
2459.46	Hf II	1		3	Me	2456.079	W II	-		7	-	2453.328	Ag II	-		125 h	-
2459.46	Br	-		[2]	Bl	2456.07	Kr	-		[6]	Me	2453.259	Ta	2		-	-
2459.45	O	-		[8]	Mh	2456.00	Yb	-		3 h	Me	2453.228	In II	-		[30]	Ps
2459.429	Ru	-		4	-	2455.915	Na I	2 R		-	Fl	2453.175	Mn	-		40 wh	-
2459.362	V	-		20	-	2455.901	Fe II	-		25 h	-	2453.133	Mo	2		20	-
2459.329	Na	-		[5]	Fr	2455.889	Ru	5		1	-	2453.100	Re	15		-	-
2459.315	Ni II	-		2	-	2455.88	La II	-		10	-	2453.089	Cb	8		2	-
2459.295	W	18		10	-	2455.868	Ir I	10		2	-	2452.928	W	-		12	-
2459.292	Zr	3		-	-	2455.856	W II	-		12	-	2452.918	Fe II	-		6	-
2459.239	V	-		4	-	2455.851	Re	8		-	-	2452.86	Pr	-		8	-
2459.23	Cs	-		[2]	Bs	2455.80	Cs	-		[8]	Bs	2452.807	Ir I	35		2	-
2459.172	Fe	6		-	-	2455.705	Rh	15		200 W	-	2452.776	V	-		2	-
2459.17	Rh	1		10 wh	-	2455.682	In	-		3	-	2452.758	Pd II	-		2 h	-
2459.168	Ru	5		3 wh	-	2455.680	U	10		2	-	2452.74	La II	-		8	-
2459.097	Fe II	1		3	-	2455.609	Ir I	35		5	-	2452.70	Tl	-		100	Sd
2459.007	Th	8		3	-	2455.60	Lu	-		4	Me	2452.69	Ho	-		20	Ex
2459.0	bh C	5		-	L	2455.56	Fe	15 h		-	-	2452.59	Al II	-		[2]	Sy
2458.972	Ir I	4		-	-	2455.54	Te	-		[5]	Bl	2452.590	Fe	7		1	-
2458.964	Fe	-		10	Do	2455.533	Cb	1		3 h	-	2452.576	W	-		2	-
2458.92	W	-		12	-	2455.530	Ru	80		100 r	-	2452.53	Te	-		[10]	Bl
2458.904	Rh	50		300	-	2455.526	Ni II	-		40	-	2452.526	Mn	3 h		100 wh	-
2458.88	Al II	-		[2]	Sy	2455.501	W	12		9	-	2452.47	Hf	-		15	Me
2458.85	Hg	-		[10]	Dj	2455.453	Mo	-		8 h	-	2452.467	Cb	-		2	-
2458.782	Fe II	7		60	-	2455.426	U	12		-	-	2452.433	Pd	-		10	-
2458.74	Ho	-		10 h	Ex	2455.370	W	5		-	-	2452.405	W	-		3	-
2458.714	Mo	10		5	-	2455.31	Kr II	-		[2]	Me	2452.30	Hf II	10		8	-
2458.687	Mn	-		80 h	-	2455.252	Sn	12		12	-	2452.30	Cl II	-		[10]	Ks
2458.683	Ta	40		-	-	2455.22	Al II	-		[8]	Sy	2452.258	Ir	-		2 d	-
2458.621	Ru	60		2	-	2455.21	Ho	-		10 h	Ex	2452.22	Mo	-		10	-
2458.58	Tm	8		5	Me	2455.16	Hf II	3		3	-	2452.136	Si I	20		20	Fl
2458.566	W	1		15	-	2455.15	Dy	3		-	-	2452.111	Al	2 h		-	-
2458.317	Cb	-		5 wh	-	2455.140	Pt	-		3	-	2452.04	U	2 h		-	-
2458.288	V	1		70	-	2455.04	Kr II	-		[2]	Me	2451.998	W	12		15	-
2458.15	La II	-		2 wh	-	2455.00	Mo	15		-	-	2451.986	Zr	4		-	-
2458.12	Au	-		5	-	2454.971	W	15		10	-	2451.94	Tl II	-		30	MI
2458.090	W	-		8	-	2454.969	Zr	2		-	-	2451.874	Ob	3		100	-
2458.087	Cb	-		50	-	2454.95	Eu	5		-	-	2451.726	Os	12 s		8	-
2458.05	Al II	-		[8]	Sy	2454.923	Ru	60		5	-	2451.72	Tl II	-		10	MI
2458.025	Ti I	5		-	-	2454.85	Pr	-		12	-	2451.48	U	4		-	-
2457.995	Ru	8		2 h	-	2454.763	Pd II	-		15 h	-	2451.477	W II	15		20	-
2457.87	Cd I	2		[1]	Fl	2454.76	Yb	-		10 Wh	-	2451.388	Fe	5		-	-
2457.826	Ti I	5		-	-	2454.713	W	15		10	-	2451.342	W	12		-	-
2457.803	V	-		7	Me	2454.585	Zr II	-		2	-	2451.318	Ru	3		12	-
2457.80	Zn I	4 r		-	Fl	2454.584	Ir I	3		1	-	2451.29	Se	-		[5]	Bl
2457.766	Mo	10		60	-	2454.576	Fe II	-		80	-	2451.25	K	-		[5]	MI
2457.764	Pd II	2		8	-	2454.484	P II	-		[2]	Ri	2451.214	Fe II	-		15	-
2457.71	Os	2		10	-	2454.482	Ta	60		-	-	2451.19	Tm	8		6	Me

2451.1—2441.9 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2451.103	Fe II	1	4	-	2448.057	Bi I	50	8	Om	2445.211	Fe I	7	1	-
2451.049	Ru	3	8	-	2447.992	W	1	10	-	2445.119	Rh	2 h	8	-
2451.043	Ru	-	10 h	-	2447.970	Cb	2	30	-	2445.11	B	-	6	Sy
2451.032	W	-	9	-	2447.947	Ti II	-	5	-	2445.107	V	-	3	Me
2450.986	Ni	100 h	30	-	2447.938	Ta	2	-	-	2445.1	Pb II	-	[2]	Ea
2450.97	Ho	-	10	Ex	2447.929	Ag II	30	200 wh	-	2445.092	Ir I	4	3	-
2450.970	Pt I	400	10	-	2447.92	Te	-	[5]	Bl	2445.072	Cb	10	2	-
2450.958	Pd	-	25 wh	-	2447.909	Pd I	200 r	100	-	2445.01	-	-	[50]	Ar
2450.920	Ta	2	-	-	2447.90	In II	-	[80]	Ps	2444.973	V	2	60	-
2450.892	Re	30	-	-	2447.85	Rh	4	200 w	-	2444.936	W	-	15	-
2450.81	Th	5	3	-	2447.835	U	-	8	-	2444.852	Cb	-	3 h	-
2450.739	Ve	-	20	-	2447.81	I	-	[30]	Bl	2444.80	U	3	2	-
2450.738	Os	25	8	-	2447.763	Ir I	10	1	-	2444.742	Rh	4	25	-
2450.621	V	-	10	-	2447.76	Co	4	100 R	-	2444.74	Fe	3	-	-
2450.584	Ru	10	-	-	2447.747	Fe II	-	80	-	2444.735	Mo	1	8	-
2450.56	Rh	10 d	5 d	-	2447.708	Fe I	70	100	S	2444.668	Ta	50	200	-
2450.52	Se	-	[5]	Bl	2447.608	V	-	70	Me	2444.512	Fe II	25	60	-
2450.494	W	3	-	-	2447.53	Se	-	[5]	Bl	2444.481	Cb	2	15	-
2450.466	Ni I	20	-	-	2447.488	Ir I	2	1	-	2444.469	Th	5	3	-
2450.443	U	1	4	-	2447.451	Ru	30	-	-	2444.437	Cu	-	20	-
2450.440	Ti II	10	100	-	2447.441	Fe	5	-	-	2444.39	Eu	-	5 w	-
2450.440	Pt II	25	50	-	2447.39	Tm	5	2	Me	2444.375	Pd	-	5 h	-
2450.438	Fe	15	-	-	2447.374	W	8	-	-	2444.270	Rh I	100 w	3	-
2450.433	Cb	2 w	8 w	-	2447.320	Fe II	1	15	-	2444.26	O II	-	[30]	Fl
2450.384	W II	-	10	-	2447.254	Hf II	25	50	-	2444.209	Ag II	-	80 w	-
2450.378	Cr	-	3	-	2447.252	W	1	10	-	2444.206	Fe	9	-	-
2450.36	I	-	[20]	Bl	2447.23	Ca	-	4	-	2444.206	Pd II	-	15 h	-
2450.250	Cb	1	5	-	2447.23	Yb	-	2 d	Ad	2444.203	Mo	10 h	-	-
2450.237	V	-	20	-	2447.200	Fe II	1	30	-	2444.195	Na I	2 r	-	Fl
2450.202	Fe II	1	15	-	2447.174	Ta	12	2 h	-	2444.151	Dy	2	-	-
2450.071	Ga	10	10	m	2446.988	Re	100 W	-	-	2444.126	Ta	20	4	-
2450.065	Cb	1	3	-	2446.927	Cr	-	4	-	2444.12	I	-	[60]	Bl
2450.065	Hf II	-	2	-	2446.905	Hg I	10	15	-	2444.12	Cl II	-	[7]	Ks
2450.039	Pd	-	15 h	-	2446.89	Te	-	[50]	Bl	2444.1	Rn	-	[12]	Pe
2450.004	Co	40	200	-	2446.836	Ir	2	1	-	2444.058	Rh	2	100	-
2449.0	Po	-	[10]	Ka	2446.788	W	4	-	-	2444.056	W	18	9	-
2449.965	Cr	-	10	-	2446.78	Pr	-	8	-	2444.047	U	4	4	-
2449.960	Fe II	1	30	-	2446.714	Pd II	-	50	-	2444.030	Ru	12	-	-
2449.858	Ru	20	-	-	2446.703	V	1	50	m	2443.936	Ta	60	-	-
2449.849	Zr II	50	20	-	2446.66	Rh	-	25 wh	-	2443.92	Ti I	5 R	-	Fl
2449.821	Ta	-	2 wh	-	2446.593	Ru	3	3	-	2443.870	Fe I	40	4	I
2449.816	Ir I	2	-	-	2446.49	U	-	8 h	-	2443.838	Pb	100 w	15	-
2449.79	Sn II	-	25	Me	2446.465	Fe II	3	40	-	2443.781	Co II	8	20	-
2449.786	Ru	4	20 h	-	2446.452	Mn	-	20 wh	-	2443.76	Se	-	[10 h]	Bl
2449.747	Mn	-	10	-	2446.44	Kr II	-	[8]	Me	2443.715	Cd II	-	4	-
2449.736	Fe II	1	2	-	2446.440	Cb	-	10	-	2443.711	Rh	4	100	-
2449.72	Zn I	10	-	Fl	2446.386	W II	10	30	-	2443.615	W	15	8	-
2449.713	Re	40	-	-	2446.37	Er	15	2	-	2443.614	Pd	-	3 h	Dn
2449.70	Si	-	[5]	Sy	2446.32	Ag II	-	25 wh	-	2443.529	Cb	5	2	-
2449.692	W II	2 h	15	-	2446.188	Pb	150 w	15	-	2443.45	Pd II	-	[5]	Bx
2449.652	Cr	-	10	-	2446.182	Pd II	-	100	-	2443.442	Mo	4	20	-
2449.573	Mg II	20	-	Fl	2446.15	Au II	-	5	Ex	2443.378	Si I	15	15	Fl
2449.49	Ti I	5 R	-	Fl	2446.133	Cb	5	-	-	2443.332	W	10	2	-
2449.444	Ta	4 h	4 h	-	2446.129	Ti I	10	5	-	2443.320	Cu II	1	10 h	-
2449.44	Hf II	15	20	-	2446.104	Fe II	3	35	-	2443.287	Fe	3	-	-
2449.393	Na I	2 R	-	Fl	2446.10	B	-	[6]	Sy	2443.225	Ru	3	1	-
2449.309	Zr	3	-	-	2446.085	Cb	-	10 h	-	2443.2	Ca	-	[2]	Bs
2449.272	Fe II	-	1	-	2446.04	Eu	1	6 w	-	2443.188	Mo	2	20	-
2449.187	Fe II	-	4	-	2446.035	W	-	10	-	2443.172	W	5	4	-
2449.184	W	-	3	-	2446.023	Os	12	8	-	2443.166	Fe	7	-	-
2449.163	Co II	12	30	-	2446.02	In II	-	[5]	Lg	2443.16	La II	-	2 h	-
2449.14	In	-	2	Sq	2446.020	Co	2	40	-	2443.099	Pt II	-	3	-
2449.038	Rh	35	5	-	2446.0	K	-	[20]	MI	2442.972	W	12	2	-
2449.024	Ir I	5	1	-	2445.917	W	5	-	-	2442.895	U	5	4	-
2448.95	Ho	-	10 h	Ex	2445.880	Os	8	15	-	2442.80	La	-	3	Me
2448.94	Sn II	-	5 W	-	2445.830	Cb	-	100	-	2442.78	Xe	-	[7 h]	Hu
2448.931	U	8	2	-	2445.782	Fe II	2	15	-	2442.76	Ho	-	20	Ex
2448.862	Ru	12	6	-	2445.748	Zr	5 h	-	-	2442.727	Rh	1	10	-
2448.835	Rh I	35	5	-	2445.65	As	-	3	Ro	2442.70	Ti II	-	6	-
2448.732	Fe II	-	2	-	2445.643	Rh I	25	2	-	2442.677	Cb	1	50 w	-
2448.73	Eu	-	2 w	-	2445.579	Ru	10	-	-	2442.66	Co	2	20	-
2448.65	W	-	12	-	2445.57	La	-	10 h	-	2442.656	Co II	2	3 h	-
2448.498	Ru	5	-	-	2445.558	Fe II	15	40	-	2442.63	In II	-	[30]	Ps
2448.48	I	-	[20]	Bl	2445.55	O II	-	[300]	Fl	2442.626	Pt II	20	40	-
2448.47	V	-	6 h	-	2445.53	Au II	-	5	-	2442.567	Fe	70	10	I
2448.389	W	15	5	-	2445.52	Pr	-	40	-	2442.52	Re	25	-	-
2448.388	Fe	3	-	-	2445.515	Sb	75	30	-	2442.46	In II	-	[18]	Ps
2448.385	Zr I	6	-	-	2445.46	Er	-	5	-	2442.393	Ta	10	-	-
2448.280	Rh	2	100	-	2445.46	Tm	10	15	Me	2442.34	Au	-	5 h	-
2448.261	Cb	1	20 W	-	2445.454	W	4	3	-	2442.16	Ti I	5 R	-	Fl
2448.229	Ir I	10	1	-	2445.341	Ir I	10	4	-	2442.142	Cb	3	80	-
2448.217	W	-	15	-	2445.34	Cl II	-	[20]	Ks	2442.1	Rn	-	[20]	Pe
2448.217	Cu II	1 h	2 h	-	2445.336	V	-	4	-	2442.07	Se I	-	[15]	Rd
2448.19	Pr	-	6	-	2445.246	W	5 d	3	-	2442.01	Pd	-	[2]	Bx
2448.164	Pd II	-	100	-	2445.226	V I	2	-	-	2441.991	Zr II	5	10	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2441.894	V I	12	12	-	-	2438.75	In	-	3	-	Sq	2435.72	Br	-	-	[3]	Bl
2441.89	U	-	4	-	-	2438.641	Ta	40	4	-	-	2435.57	Nd	-	-	5	-
2441.859	Cb	3 w	25 w	-	-	2438.64	Pr	-	25	-	-	2435.521	V I	35 r	35	-	-
2441.852	Ta	2	5	-	-	2438.57	Mo	1	10	-	-	2435.520	Zn II	-	10	-	-
2441.822	Ni I	18	6	-	-	2438.556	W	-	3	-	-	2435.509	Ru	6	2	-	-
2441.743	Ru	6	-	-	-	2438.475	Cr	-	35	-	-	2435.47	Xe II	-	-	[4]	Hu
2441.72	Co	-	15	-	-	2438.473	Re	25	-	-	-	2435.43	Au	-	-	5 h	-
2441.67	O II	-	[5]	-	Mh	2438.411	Co I	2	3 h	-	-	2435.426	W	-	-	12	-
2441.667	Ni I	18	4	-	-	2438.39	La II	-	10	-	-	2435.376	Cb	1	3	-	-
2441.644	Mo	10 R	-	-	Pu	2438.353	W	-	6	-	-	2435.322	Pd II	-	-	50	-
2441.637	Cu I	200	100	IBu	-	2438.343	Mo	1	15 W	-	-	2435.19	Eu	-	-	2 w	-
2441.60	W	2	10	-	-	2438.310	Ti I	10	-	-	-	2435.159	Si I	150	80	Fl	-
2441.546	Fe II	1	5	-	-	2438.28	I II	-	[5]	Mu	-	2435.149	Zr	25	-	-	-
2441.50	Se	-	[10]	-	Bl	2438.222	Mn	1	15 wh	-	-	2435.140	Ir I	8	1	-	-
2441.48	Re	40	-	-	-	2438.181	Fe I	30	4	I	-	2435.138	Mn	1	8	-	-
2441.440	Ru	4	-	-	-	2438.044	V	-	15 h	-	-	2435.092	Co	20 w	2 h	IBu	-
2441.38	W	-	10 d	-	-	2437.999	La II	-	20	-	-	2435.071	Cb	1	10 w	-	-
2441.353	V I	5	5	-	-	2437.961	W	6	-	-	-	2435.07	Ag II	-	-	[2]	Bx
2441.30	Zr	8	-	-	-	2437.930	Pd II	-	15 wh	-	-	2435.007	W II	3	30	-	-
2441.289	Th	-	10	-	-	2437.914	Mn	-	25 wh	-	-	2435.0	bh C	30	-	L	-
2441.16	Mn	-	15 wh	-	-	2437.888	Ni II	40 w	200	-	-	2434.962	Cb	3	1	-	-
2441.050	Co	20	7	-	-	2437.797	Pd II	-	15 h	-	-	2434.95	B	-	20	Sy	-
2441.03	Hg I	4	[1]	-	Di	2437.791	Ag II	60	500 wh	-	Fn	2434.944	Fe II	6	20	-	-
2441.02	Hf	1	5 hl	-	-	2437.76	Pd	-	3 h	-	-	2434.943	V	-	3	-	-
2441.010	Cu	2 h	-	-	-	2437.74	Cl	-	[3]	Jv	-	2434.882	Ru	50	-	-	-
2440.985	Ti I	35	-	-	-	2437.736	Mo	10	80 W	-	-	2434.75	Tm	5	2	Me	-
2440.973	Cb	1	5	-	-	2437.721	Cb	-	5 wh	Me	-	2434.741	Ta	2	-	-	-
2440.969	Ir I	2 h	-	-	-	2437.669	U	4	4 h	-	-	2434.74	Hf II	8	-	15	-
2440.969	Ir I	12	-	-	-	2437.666	Fe II	1	3 h	-	-	2434.73	Te	-	-	[15]	Bl
2440.962	Ta	2	-	-	-	2437.61	I	-	[20]	Bl	-	2434.728	Fe	6	30	-	-
2440.9	K	-	[5]	-	MI	2437.56	Th	5	4	-	-	2434.673	W	3	-	-	-
2440.89	P	-	[5]	-	Gu	2437.484	W	-	9	-	-	2434.665	Cb	-	3	-	-
2440.863	Fe	3	-	-	-	2437.424	Mn	-	40 wh	-	-	2434.645	Fe II	1	5 h	-	-
2440.815	Os	3	15	-	-	2437.415	Cb	4	100	-	-	2434.574	Zr II	12	8	-	-
2440.70	Tm	9	3	Me	-	2437.339	W	-	6	-	-	2434.459	W	1	9	-	-
2440.6	K	-	[2]	-	Sg	2437.267	Fe II	1	1	-	-	2434.458	Pt II	20	40	-	-
2440.57	Yb	-	3 h	-	Me	2437.23	As I	25	2	Me	-	2434.415	Ni I	40 w	-	-	-
2440.454	Mn	-	8	-	-	2437.166	Cb	5	1	-	-	2434.41	Pr	-	6	-	-
2440.434	W II	2	15	-	-	2437.154	Fe II	2	2	-	-	2434.35	Te	-	-	[10]	Bl
2440.432	U	1 h	2	-	-	2437.13	La II	-	10 w	-	-	2434.30	Cd II	-	-	[2]	Tk
2440.425	Fe II	1	40	-	-	2437.1	Cs	-	[2]	Bs	-	2434.28	Ti II	-	-	[5]	El
2440.38	Cl	-	[6]	-	An	2437.1	bh B	250	-	L	-	2434.257	W	10	12	-	-
2440.340	Zr	5	-	-	-	2437.08	Pr	-	4	-	-	2434.245	Fe II	3	10 h	-	-
2440.277	Mo	4	20	-	-	2437.07	Ho	-	10	Ex	-	2434.205	Mn	12	-	-	-
2440.21	Ti II	5	35	-	-	2437.070	Ta	20	-	-	-	2434.189	Mo	-	3 h	-	-
2440.21	Zn	-	[3]	-	Vs	2436.979	Co II	2	20	-	-	2434.105	Ti I	10	1	-	-
2440.183	Ir	-	5	-	-	2436.95	B	-	2	Sy	-	2434.10	Se	-	-	[10]	Bl
2440.12	Co	4 w	1 wh	-	-	2436.93	Dy	3	-	-	-	2434.10	Cl II	-	-	[50]	Ks
2440.107	Fe	25	8	-	-	2436.923	Ru	25	-	-	-	2434.070	Mn	10	-	-	-
2440.07	A II	-	[2]	-	Rt	2436.884	Sn	-	2	-	-	2434.014	Ir	2	1	-	-
2440.060	Mo	1	8	-	-	2436.835	W	6	-	-	-	2433.984	W	12	10	-	-
2440.057	Pt I	800 w	100 wh	-	-	2436.76	Eu	-	2 wh	-	-	2433.96	Mo	-	25 d	-	-
2440.046	Na I	2 r	-	-	Fl	2436.689	Pt I	300	20	-	-	2433.908	Fe	2	-	-	-
2440.04	Se	-	[5]	-	Bl	2436.672	Ni	30 I	20	-	-	2433.9	In	-	2	Cx	-
2440.014	Pd	-	2 h	-	-	2436.657	Co	50 R	25	-	-	2433.890	Hf II	-	2 h	-	-
2439.911	Ta	4	-	-	-	2436.63	Te	-	[25]	Bl	-	2433.867	Ru	-	8	-	-
2439.907	W	-	6	-	-	2436.626	Fe II	4	25 h	-	-	2433.82	Te	-	-	[10]	Bl
2439.907	Cu I	6	-	-	-	2436.623	W	12	9	-	-	2433.795	Cb	3	100	-	-
2439.85	Cs	-	20	a	-	2436.6	K	-	[20]	MI	-	2433.786	U	8	4	-	-
2439.842	W II	-	6 d	-	-	2436.57	Ag II	-	20 wh	-	-	2433.772	Ru	2	2	-	-
2439.8	Cs	-	[2]	-	Bs	2436.512	Ta	10 h	40	-	-	2433.76	Ag	-	8	Ro	-
2439.774	V	-	4 h	-	Me	2436.499	Pd	-	25 wh	-	-	2433.743	W	7	3	-	-
2439.744	Fe	20	12	-	-	2436.442	Co	1	5	-	-	2433.686	Cb	5	3	-	-
2439.709	Ru	3	5	-	-	2436.424	Ir I	3	-	-	-	2433.61	Yb	-	3 h	-	-
2439.68	Yb	-	2	-	-	2436.42	La II	-	15 W	-	-	2433.587	Ta	10	20	-	-
2439.503	Co	8 h	-	-	-	2436.39	Ge I	2	1	-	-	2433.57	Ag	-	4 h	-	-
2439.503	Zr	4	-	-	-	2436.348	Pd II	-	2 h	-	-	2433.567	Ni II	-	80	-	-
2439.50	Ti I	5 R	-	-	Fl	2436.344	Fe	25	-	-	-	2433.566	Hf II	15	50	-	-
2439.466	W	-	10	-	-	2436.330	Cb	5	3	-	-	2433.557	Cb	-	4 wh	-	-
2439.42	Zn	-	[25]	-	Vs	2436.29	Ir	-	3	-	-	2433.54	Au	-	5 h	-	-
2439.33	Ho	-	20	Ex	-	2436.258	W	8	2	-	-	2433.538	W	-	3	-	-
2439.300	Fe II	15	100	-	-	2436.221	Fe II	-	10	-	-	2433.53	O II	-	-	[250]	Mh
2439.29	Yb	-	2	-	-	2436.20	I	-	[20]	Bl	-	2433.496	Fe II	2	15	-	-
2439.204	W	4	-	-	-	2436.12	Dy	4	-	-	-	2433.495	Pt II	1	10 h	Sh	-
2439.104	V I	15 r	15	-	-	2436.061	Re	25	-	-	-	2433.477	Sn II	5	5	-	-
2439.046	Co I	20 R	20	-	-	2436.06	O II	-	[20 h]	Mh	-	2433.451	W	9	-	-	-
2438.967	W	3	-	-	-	2436.03	Hg	-	[2]	Dj	-	2433.446	Bi	30	-	-	-
2438.88	Ga II	-	[8]	-	Sy	2436.00	As	-	4	-	-	2433.444	Cd II	-	8	-	-
2438.86	Dy	2	-	-	Ed	2435.963	Mo	10	50 h	-	-	2433.291	Re	30	-	-	-
2438.86	Se	-	[5]	-	Bl	2435.962	W	30	10	-	-	2433.245	Zr	-	2 wh	-	-
2438.843	W	-	5	-	-	2435.952	Cb	3	50	-	-	2433.224	Cr	-	10	-	-
2438.80	Te	-	[25]	-	Bl	2435.855	Fe	2 h	2	-	-	2433.223	Ti I	35	-	-	-
2438.786	Rh	2	100	-	-	2435.830	Co	10	1	-	-	2433.158	Ta	2	-	-	-
2438.782	Si I	30	20	Fl	-	2435.81	Bi	5 h	-	To	-	2433.146	W	2	10	-	-
2438.78	A	-	[2]	-	Rt	2435.809	Fe II	-	3	-	-	2433.104	Pd II	-	50	-	-

2433.0—2424.5 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
2433.00	Ho	—	20	Ex	2429.972	W II	2	9	—	2427.295	Mo	2	20	—
2432.981	V	1	25	—	2429.864	In I	20 R	—	Ps	2427.287	W	10	1	—
2432.95	Au	—	5 h	—	2429.843	W	10	5 h	—	2427.21	Lu	—	3	Me
2432.927	Ru	60	—	—	2429.813	Fe I	6	—	—	2427.205	In II	—	[40 h]	Ps
2432.868	Fe	5	40	—	2429.734	Ir I	2	1	—	2427.197	Fe II	—	5	—
2432.832	Cb	—	3 w	—	2429.71	Ta	20 I	40	—	2427.086	Ir I	2	—	—
2432.761	W	1	9	—	2429.66	Ta	2	5	—	2427.082	Ru	1	6	—
2432.74	Kr	—	[8]	Me	2429.653	Re	25	—	—	2427.076	Cd II	—	3	—
2432.730	In II	—	[25]	Ps	2429.635	Ag II	—	150 wh	—	2427.068	W	—	2	—
2432.72	Xe II	—	[6]	Hu	2429.596	Ru	60	—	—	2427.001	Co	12	1	—
2432.701	Ta	300 r	400	—	2429.516	Rh I	4	4	—	2426.974	Mo	—	2	—
2432.693	Re	15	—	—	2429.515	W II	1	10	—	2426.956	Cb	2	—	—
2432.6	Cs	—	[8]	Bs	2429.50	Re	30	—	—	2426.882	Ir I	2	—	—
2432.579	Ir I	5	1 h	—	2429.497	Sb	—	3	—	2426.87	Hf	—	3	—
2432.52	Co	—	80	—	2429.495	Fe II	—	2	—	2426.868	Pd II	—	50	—
2432.48	Zn II	—	[2]	Vs	2429.495	Sn	200 R	250 R	—	2426.812	Os	15	3	—
2432.355	Ir I	5	—	—	2429.41	Mo	4	25	—	2426.791	Cb	—	40	—
2432.322	Cb	2 w	40 w	—	2429.392	W	—	10	—	2426.776	Ir I	2	—	—
2432.29	B II	—	35	Sy	2429.385	Fe II	—	15	—	2426.735	Pd	—	3	—
2432.267	Fe II	25	70	—	2429.357	Pt II	4	10	—	2426.707	Ru	12	5	—
2432.262	Zr II	—	2	—	2429.349	Ta	10	—	—	2426.636	Cb	3	2	—
2432.250	Ru	10	1	—	2429.234	Mn	15	—	—	2426.63	Zn I	8	—	Fl
2432.23	Si	—	[5]	Sy	2429.228	Co I	25	3	—	2426.593	Ta	2	—	—
2432.214	Co I	40 R	—	—	2429.19	Zr	3	—	—	2426.532	Ir	3	1	—
2432.173	Re	100 W	—	—	2429.109	Ru	3	3	—	2426.514	W	1	20	—
2432.018	V I	10	10	—	2429.105	Rh	—	10	—	2426.465	Rh	3	2	—
2431.963	Fe	3	—	—	2429.096	Ni I	15	1	—	2426.41	Cs	—	[8]	Bs
2431.952	V I	10	10	—	2429.096	Pt I	100	—	—	2426.39	Te	—	[100]	Bl
2431.938	Ir I	50	50	—	2429.08	Mo	—	5 h	—	2426.385	Cd II	—	5	—
2431.847	Rh	3	10	—	2429.036	Fe II	1	8	—	2426.381	Zr II	2	4	—
2431.794	Ti I	4	—	—	2428.990	Ta	2	—	—	2426.38	Nd	—	5	—
2431.78	Te I	10	[15]	Bl	2428.989	Hf II	12	20	—	2426.37	Mo	3	5	—
2431.777	Pd II	—	15	—	2428.911	Cu II	1 h	5 h	—	2426.36	Kr II	—	[10]	Me
2431.741	Th	2	30	—	2428.882	Cb	—	12 wh	—	2426.352	Sb	75	25	—
2431.74	Pr	—	5 h	—	2428.86	Zn II	—	[10]	Vs	2426.310	Ir	2	4	—
2431.712	W	2	10	—	2428.795	Fe II	1	15	—	2426.309	Fe	4	—	—
2431.676	Cb	1 w	40 w	—	2428.78	Mo	—	20 h	—	2426.240	Cb	1	4	—
2431.658	Ta	10	—	—	2428.773	W	—	10	—	2426.218	W	—	2	—
2431.607	Os	40	4	—	2428.718	Ru	12	3	—	2426.16	Tm	40	20	Me
2431.602	U	2	—	—	2428.644	Pb	10 h	8	Kl	2426.130	Cb	—	3 h	—
2431.572	V I	6	6	—	2428.603	Cb	1	15	—	2426.128	V I	4	4	—
2431.570	Ni II	—	20	—	2428.596	W	3	—	—	2426.12	Co	—	20	Ex
2431.534	Re	50	—	—	2428.596	Co	10	1	—	2426.08	Pd	—	[30]	Bx
2431.520	Mn	12	1	—	2428.48	Ta	—	20 w	—	2426.074	W	7	—	—
2431.46	Pd II	—	[25]	Bx	2428.476	U	5	2	—	2425.99	Se	—	[15]	Bl
2431.45	Te	—	[10]	Bl	2428.43	Tm	5	2	Me	2425.980	W	7 d	7	—
2431.40	La	—	6 h	Me	2428.422	Mn	12	—	—	2425.975	Hf II	15	25	—
2431.375	W II	1	10	—	2428.38	In	—	3	Sq	2425.964	In II	—	[25 h]	Ps
2431.30	Fe	6	1	—	2428.361	Fe II	3	15	—	2425.930	Fe II	—	10	—
2431.26	Pr	—	5	—	2428.360	Ir I	2	—	—	2425.906	Ta	10 h	25 d	—
2431.241	Ir I	25	5	—	2428.359	Ti I	—	—	—	2425.834	In II	—	[18]	Ps
2431.193	Os	40	4	—	2428.35	Kr	—	[20]	Me	2425.798	Pd II	—	15	—
2431.16	Th	4	2	—	2428.293	Co II	10	20	—	2425.77	Ir	—	2	—
2431.084	W	10	3	—	2428.286	Fe II	1	10	—	2425.73	Mo	—	15 h	—
2431.03	Ho	—	20	Ex	2428.279	V I	30 r	20	—	2425.684	Fe II	1	40	—
2431.024	Fe	20	3 h	I	2428.228	Ti I	15	—	—	2425.68	Li I	30 w	—	Fl
2430.986	In I	10 R	—	Ps	2428.203	Pt I	100	20	—	2425.661	Ir I	15	—	—
2430.929	Ru	—	3 wh	—	2428.20	Fe	9	—	—	2425.61	Al II	—	[2]	Sy
2430.929	Pd II	—	30 h	—	2428.196	Ag II	1	40 wh	—	2425.594	Co I	8	1	—
2430.92	I	—	[20]	Bl	2428.18	Mo	—	15	—	2425.55	O II	—	[25]	Mh
2430.839	Fe	—	2	—	2428.173	W	5	12	—	2425.403	U	5	2	—
2430.82	B	—	2	Sy	2428.095	Sr I	10 h	—	ISn	2425.361	Fe II	—	20	—
2430.813	Rh	2	20	—	2428.035	Pt I	100	10	—	2425.15	Cs	—	[20]	Bs
2430.79	Zn I	8	—	Fl	2428.02	Cl II	—	[10]	Ks	2425.114	Cb	1	3	—
2430.770	W	—	10	—	2427.99	Th	3	25	—	2425.10	Mo	—	5	—
2430.617	W	4	—	—	2427.978	Mn	—	50 wh	—	2425.05	Xe	—	[20 h]	Hu
2430.538	Pd II	—	25	—	2427.963	Ir	5	—	—	2425.02	Pd II	—	[3]	Bx
2430.454	Bi I	30	6	Om	2427.95	Au I	400 R	100	—	2425.0	bh C	20	—	L
2430.438	W	10	2	—	2427.900	Os	8	40	—	2424.990	Ir I	15	2	—
2430.429	Mo	20	4	—	2427.813	W II	1	7	—	2424.971	U	3	2	—
2430.396	Mn	12	1	—	2427.79	Cl II	—	[20]	Ks	2424.970	Os	50	8	—
2430.352	Ag	—	3	—	2427.753	Mn	—	50 wh	—	2424.932	W	—	8	—
2430.323	Ru	6	10	—	2427.745	V I	6	6	—	2424.930	Co I	250 R	—	—
2430.311	Cb	1	3 h	—	2427.741	Ru	2	12	—	2424.900	Zr I	3	—	—
2430.274	Mo	—	15	—	2427.70	Al II	—	[15]	Sy	2424.886	Ir I	10	—	—
2430.26	Lu	3	15	Me	2427.65	Cs	—	[20]	Bs	2424.869	Pt II	50	100	—
2430.252	Pd II	—	10	—	2427.642	Ta	150	1	—	2424.770	W	6	—	—
2430.186	Fe II	2	2	—	2427.622	U	12	2	—	2424.717	Os	3	1	—
2430.175	Co	10	—	—	2427.613	Ir I	25	2	—	2424.70	A II	—	[2]	Rt
2430.16	Cl II	—	[30]	Ks	2427.539	Cb	5	2 h	—	2424.662	Gd	2	—	—
2430.078	Pd II	—	10	—	2427.490	W II	10 d	12	—	2424.660	Ir	10	8 h	—
2430.072	Fe II	15	70	—	2427.454	U	12	2	—	2424.585	Fe II	1	20	—
2430.06	A II	—	[5]	Rt	2427.410	Mn	—	50 wh	—	2424.584	W	—	8 h	—
2430.04	Cl	—	[15]	An	2427.339	Rh	2	50	—	2424.565	Os	20	3	—
2430.04	V	—	70	Me	2427.327	V	—	35	—	2424.529	Ru	2	6	—

Wave-length	Element	Intensities		Wave-length	Element	Intensities		Wave-length	Element	Intensities	
		Arc	Spk., [Dis.] R			Arc	Spk., [Dis.] R			Arc	Spk., [Dis.] R
2424.524	La	—	2 h	—	2421.64	Tm	15 6	2418.56	Pd	—	[3]
2424.480	Pd II	—	100	—	2421.61	La II	— 5 h	2418.553	Ir I	2	—
2424.436	Cu II	4	200	IBu	2421.53	Eu	3 w	2418.529	Os	15	3
2424.408	U	3	2	—	2421.42	Lu	— 4	2418.46	O II	—	[40]
2424.39	Se	—	[5]	Bl	2421.4	Cs	— [2]	2418.440	Fe II	1	10 h
2424.390	Fe II	2	4	—	2421.39	Re	25	2418.41	Kr	—	[4]
2424.34	P	—	[4]	Gu	2421.36	Yb	4 15	2418.377	U	6	6 h
2424.29	Ga	—	5	Kl	2421.356	W	— 3	2418.359	Ti I	20	—
2424.260	Mn	10	—	—	2421.305	Ti I	25	2418.26	Cd II	—	5
2424.258	Mo	—	15	—	2421.27	Xe	— [10 h]	2418.252	W	—	15
2424.245	Ti I	30	1	—	2421.227	Ni I	20 s 4	2418.106	Ir I	30	5
2424.216	W	20	7	—	2421.214	Ir I	2	2418.058	Pt I	300	50
2424.154	Mn	—	3	—	2421.062	V I	25 r 25	2417.986	Os	20 s 3	—
2424.143	Fe II	25	70	—	2421.032	Ta	20	2417.958	Mo	5	30
2424.028	Ni I	20	—	—	2421.010	W II	7 12	2417.929	Mn	—	8
2424.024	Os	8	10	—	2420.979	Rh	30 100	2417.903	Ir	—	5
2424.01	Cl II	—	[10]	Ks	2420.820	Ru	60 2	2417.866	Fe II	10	100
2424.003	Hf II	—	4 h	—	2420.817	Pt II	4 10	2417.856	Ta	20 W	40
2424.002	Cb	4	1	—	2420.76	Hf II	1 2	2417.827	W	—	6
2424.00	A	—	[2]	Rt	2420.726	Co	8 80	2417.736	Pt II	—	10
2423.995	Mo	6	40	—	2420.717	Mo	15 3	2417.699	Ta	10	—
2423.941	W	—	15	—	2420.60	In	— 2	2417.693	Hf II	25	40
2423.748	Zr	9	—	—	2420.529	Mo	15 1	2417.666	In	—	2
2423.72	Ti	—	5 h	—	2420.520	U	2 2	2417.654	Co II	20 w	20
2423.716	Mo	2	10	—	2420.495	W	2 15	2417.61	La II	—	3 h
2423.703	U	15	4	—	2420.49	A II	— [10]	2417.604	W	—	15
2423.675	Th	6	5	—	2420.405	Mn	12	2417.537	V	—	30
2423.656	Ni I	20	5	—	2420.383	Fe I	2	2417.51	Ti	—	4
2423.621	Co II	12	20	—	2420.28	Er	5 2	2417.490	Fe I	6	—
2423.569	Sr II	5	5	ISn	2420.251	Ru	— 4	2417.373	Mo	—	10
2423.540	Ru	2	3 wh	—	2420.221	V	3 2	2417.366	Ge	10	12
2423.485	Ta	10 h	8	—	2420.200	W	10	2417.351	V I	25 r	20 h
2423.40	I	—	[20]	Bl	2420.177	Rh	4 4	2417.329	Co	25	—
2423.390	Pd II	—	2 h	—	2420.176	Mo	1 40	2417.326	Cb	2	15
2423.375	V I	15	15	—	2420.144	Cb	4 1	2417.29	Yt II	4	8 h
2423.326	Ni I	25	4	—	2420.14	Te I	10 [2]	2417.23	Hf	—	3 h
2423.278	W	—	15	—	2420.122	V I	20 r 20	2417.16	Hg	—	[2]
2423.23	Se	—	[5]	Bl	2420.119	Ru	2 8	2417.157	Cb	—	5 h
2423.21	I	—	[20]	Bl	2420.115	Mn	12	2417.09	Pd	—	[3]
2423.210	Fe II	2	40	—	2420.067	Ag II	— 100 hw	2417.049	Co	10	—
2423.13	Ga	—	3	—	2420.06	Cs	— 2	2416.999	W	—	5 wh
2423.094	Fe I	5	—	—	2420.01	La	— 5 h	2416.993	Cb	8	200
2423.092	Ru	8	—	—	2420.005	W	— 7	2416.946	Ru	6	12
2423.076	Rh	—	15	—	2419.966	Cb	3	2416.896	Co II	8	20
2423.071	Os	25	80	—	2419.950	Rh	1 2	2416.892	Ta	100	150
2423.038	V	—	10	—	2419.876	Fe I, II	2 3	2416.88	Zr II	—	2 w
2422.941	Fe II	—	2	—	2419.846	W	— 3	2416.751	V I	40 r	40 h
2422.94	Xe	—	[5]	Hu	2419.832	Co I	6	2416.714	Fe II	—	5
2422.925	Ru	60	8	—	2419.812	Mn	— 5	2416.70	Ti I	5 l	—
2422.9	Cs	—	[2]	Bs	2419.803	Cb	4	2416.684	Pd II	—	25 wh
2422.83	Yb	1	2	—	2419.80	Si	— [2]	2416.63	Br	—	[2]
2422.82	Tb	—	10	Ex	2419.79	Er	— 5	2416.61	Au II	—	5 h
2422.815	Ta	2	—	—	2419.78	Fe	3	2416.572	Mo	15	1
2422.75	Dy	3	—	—	2419.715	Ta	2	2416.54	Si	—	[2]
2422.73	A	—	[2]	Rt	2419.573	U	10 4	2416.490	Ru	10	2 h
2422.679	Fe II	3	70	—	2419.49	Sn	— [40]	2416.46	U	2	2
2422.659	W	7	—	—	2419.49	Cd II	— [25]	2416.457	Fe II	1	40 h
2422.642	Pd II	—	2 h	—	2419.468	Cb	1 10	2416.420	W	—	2 h
2422.637	U	1	10	—	2419.41	Fe	3	2416.411	Cr	—	5
2422.63	Ga	—	4	m	2419.41	I	— [20 l]	2416.351	Mn	—	15
2422.592	Ag II	—	10 wh	—	2419.410	Pd II	— 2 h	2416.349	Pd	—	2
2422.571	Ru	50	1 h	—	2419.409	Zr II	30 10	2416.257	Re	2	—
2422.564	Co	30 w	3	—	2419.37	Tm	6 3	2416.25	Hg	—	[2]
2422.53	Er	—	3	Ex	2419.345	W	2 20	2416.245	Cb	2	3 h
2422.527	W	2	12	—	2419.34	Au II	— 5 h	2416.240	Ir	2	1 h
2422.394	Pd II	—	20 h	—	2419.336	Co I	10 d	2416.232	W	9	1
2422.32	I	—	[20]	Bl	2419.313	Ni I	20 r 4	2416.213	Co	1	15
2422.285	W II	2	12	—	2419.21	Lu	8 40	2416.18	Mo	—	2
2422.185	Yt II	20	30	—	2419.195	In II	— [25]	2416.170	Cb	5	25
2422.180	Ir	2	—	—	2419.16	I	— [60]	2416.138	Ni II	40	250 h
2422.179	Mo	2	60	—	2419.121	Co	20 w 1	2416.051	W	—	10
2422.177	Ru	12	8 wh	—	2419.070	W	— 4	2416.02	Tm	6	5
2422.14	Sb	50	20	—	2419.064	In II	— [25]	2415.99	Co	10 r	20
2422.14	Rh	1	2	—	2419.058	Fe I	2	2415.959	Hf II	5	5
2422.085	Ta	2	—	—	2419.008	Mo	3 40	2415.951	Cb	2 w	15 w
2422.048	Pd II	—	15 h	—	2418.97	Pr	— 20	2415.92	Lu	—	5
2421.980	V I	35 r	35	—	2418.932	In II	— [10]	2415.911	Zr	5	—
2421.909	Cb	—	80	—	2418.908	Ru	4 8	2415.862	Ir I	15	—
2421.901	U	2	12	—	2418.772	Ta	15 6	2415.841	Ah	100	200
2421.848	Ta	8	40	—	2418.739	V I	3 2	2415.80	Rh	—	[2 h]
2421.762	Re	50	—	—	2418.727	Pd II	— 50	2415.718	Ru	4	10
2421.693	Sn	150[R	200 R	—	2418.70	Cd II	— 20	2415.68	Zr	3	—
2421.688	Co I	8	—	—	2418.699	Ga	3 5	2415.679	W	15	9
2421.670	W	—	10	—	2418.692	Cb	5 500	2415.614	Pd II	—	30
2421.650	Mo	—	25	—	2418.6	Rb	— [5]	2415.59	Te	—	[50]

2415.4—2405.9 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2415.488	In II	-	-	[5]	Ps	2412.342	W	-	-	5	-	2408.846	Mn	-	-	10	-
2415.48	Zn I	-	-	-	Fl	2412.326	Cu	-	-	3	-	2408.757	In II	-	-	[25]	Ps
2415.381	W	-	-	9	-	2412.273	Cb	-	-	5 wh	-	2408.750	Co II	25 w	-	25	-
2415.333	V I	25	-	25 h	-	2412.273	Ni II	-	-	8	-	2408.747	Cr I	40	-	1	-
2415.326	Mo	20	-	6	-	2412.10	Eu	-	-	2	-	2408.736	Pd II	-	-	100	-
2415.316	In II	-	-	[10]	Ps	2412.06	Te	-	-	[10]	Bl	2408.722	Rh	2	-	30	-
2415.306	Pd	-	-	5 h	-	2411.98	Cs	-	-	2	-	2408.67	Mo	-	-	10	-
2415.299	Co I	40 R	-	18	-	2411.95	I	-	-	[12]	Bl	2408.670	W	-	-	4	-
2415.134	V	-	-	4 h	-	2411.94	Rh	2	-	50	Ex	2408.668	Ru	12	-	-	-
2415.13	O II	-	-	[15]	Fl	2411.93	Zr	6 w	-	-	-	2408.667	Os	40	-	8	-
2415.063	Fe II	1	-	50	-	2411.815	Mo	2	-	30	-	2408.653	Fe II	-	-	5 h	-
2415.06	B	-	-	2	Sy	2411.810	W II	2	-	15	-	2408.622	Cr I	150 r	-	2 r	-
2415.0	Cs	-	-	[2]	Bs	2411.756	Pd II	-	-	25 h	-	2408.565	In II	-	-	[18]	Ps
2414.95	Pd II	-	-	[2 h]	Bx	2411.735	Pb	75	-	15	Hz	2408.52	Kr	-	-	[5 h]	Me
2414.89	Kr II	-	-	[10]	Me	2411.622	Co I	250 R	-	50	-	2408.447	Ru	4	-	10	-
2414.871	Cb	-	-	5 wh	-	2411.60	O II	-	-	[20]	Mh	2408.429	V	2	-	20	-
2414.860	Cu II	-	-	2	-	2411.60	Se	-	-	[10]	Bl	2408.415	Co	1	-	10	-
2414.825	Ru	25	-	12	-	2411.59	Ag II	-	-	[20]	Bx	2408.390	Mo	10	-	-	-
2414.807	W	-	-	25	-	2411.583	Ti I	10	-	-	-	2408.36	Ir	-	-	15 h	-
2414.80	Bi	-	-	6	Rk	2411.545	W II	-	-	12	-	2408.320	Mo	1	-	15	-
2414.77	Cs	-	-	2	-	2411.496	Ru	2	-	10	-	2408.299	Ru	12	-	-	-
2414.735	Cu	5 h	-	-	-	2411.471	W	10 d	-	-	-	2408.281	W	3	-	15	-
2414.732	Pd II	-	-	150	-	2411.38	Te	-	-	[50]	Bl	2408.256	Ta	15	-	12	-
2414.600	Zr I	10	-	-	-	2411.371	Ti I	7	-	-	-	2408.23	Tm	5	-	1	Me
2414.56	U	8	-	2	-	2411.350	Ag II	25	-	150 h	-	2408.20	Pr	-	-	8	-
2414.517	Os	25	-	3 d	-	2411.32	Th	5	-	3	-	2408.20	Br	-	-	[3]	Bl
2414.485	Cb	-	-	100	-	2411.284	W II	3	-	3 h	-	2408.150	Sn	30	-	30	-
2414.459	Co I	40 R	-	15	-	2411.266	Mo	1	-	30	-	2408.13	Zn I	5	-	-	Ps
2414.416	Ir I	2	-	1 h	-	2411.233	Cb	-	-	3 h	-	2408.045	Fe I	10	-	-	-
2414.39	Rh	2	-	4	-	2411.168	W	-	-	10	-	2408.0	bh C	30	-	-	L
2414.39	Er	1 h	-	2 h	-	2411.066	Fe II	35	-	70 h	I	2407.98	I	-	-	[60]	Bl
2414.325	Ta	4 d	-	-	-	2410.97	A II	-	-	[5]	Rt	2407.949	Fe II	-	-	20	-
2414.26	A II	-	-	[5]	Rt	2410.916	Mo	-	-	10	-	2407.94	Er	-	-	3	Ex
2414.247	Mo	2	-	15	-	2410.9	Rn	-	-	[20]	Pe	2407.922	Ru	60	-	50	-
2414.211	Cb	3	-	-	-	2410.892	Ru	30	-	-	-	2407.900	V I	15	-	10	-
2414.20	Cu II	1 h	-	2 h	-	2410.889	W	-	-	2	-	2407.89	Zr	-	-	-	-
2414.143	U	2	-	12	-	2410.88	Te	-	-	[5]	Bl	2407.884	Rh I	60	-	5	-
2414.131	W II	-	-	4	-	2410.846	In II	-	-	[18]	Ps	2407.81	I	-	-	5 hl	-
2414.13	Hg II	-	-	[25 h]	Ps	2410.752	Ni II	-	-	6	-	2407.785	W	1	-	15	-
2414.080	Fe II	-	-	4	-	2410.731	Ir I	8	-	1	-	2407.687	Cb	3	-	15	-
2414.063	Co II	8	-	30	-	2410.72	Xe II	-	-	[4]	Hu	2407.668	Co II	1	-	15	-
2414.040	W	12	-	2	-	2410.688	Rh	2	-	50	-	2407.592	V	-	-	2	-
2413.939	Cb	-	-	300	-	2410.629	W	7	-	-	-	2407.590	Ir I	10	-	1	-
2413.921	Ru	-	-	2	-	2410.57	Mn II	-	-	6	Cz	2407.58	Fe	7	-	-	-
2413.92	Yt II	1	-	3 h	-	2410.517	Fe II	50	-	70 h	I	2407.57	I	-	-	[12]	Bl
2413.91	Pd II	-	-	[3]	Bx	2410.514	Pd	-	-	2	-	2407.567	Ta	20	-	-	-
2413.81	Kr	-	-	[10 h]	Me	2410.513	Co	40 w	-	-	-	2407.54	Te	-	-	[5]	Bl
2413.778	W	9	-	3	-	2410.469	Ir I	2	-	-	-	2407.49	O II	-	-	[25]	Fl
2413.580	Co	15	-	2	-	2410.442	W	-	-	20	-	2407.35	Hg II	-	-	[25 h]	Ps
2413.517	Se I	-	-	[125]	Rd	2410.4	K	-	-	[10]	Ml	2407.284	W	-	-	12	-
2413.503	Zr	8	-	-	-	2410.37	Re	20	-	-	-	2407.254	Co I	100	-	2	-
2413.49	Th	5	-	20	-	2410.332	Pt II	-	-	50	-	2407.229	Fe	20	-	2	-
2413.45	Be II	-	-	[25]	Ps	2410.297	U	-	-	12	-	2407.173	V	-	-	15 wh	-
2413.405	Th	5	-	-	-	2410.275	Cb	4 w	-	25 w	-	2407.135	Mo	3	-	40	-
2413.4	Rn	-	-	[3]	Wo	2410.186	Pd II	-	-	25 wh	-	2407.10	Cl II	-	-	[5]	Ks
2413.390	Pd II	-	-	40	-	2410.167	Ir I	15	-	-	-	2407.05	Cl	-	-	[2]	An
2413.384	Ru	-	-	4	-	2410.156	Ru	-	-	12	-	2406.993	Fe II	1	-	5	-
2413.33	Hf II	5	-	8	Me	2410.139	Hf II	25	-	50	-	2406.989	V	-	-	5	Me
2413.310	Ir I	25	-	-	-	2410.10	La	-	-	5 hl	Me	2406.939	Cb	5 w	-	1	-
2413.309	Fe II	60	-	100 h	I	2410.09	Mo	-	-	60 h	-	2406.9	Os	-	-	[2]	Bs
2413.191	Co I	15	-	-	-	2410.090	Ag	-	-	5	-	2406.882	Ni II	-	-	20	-
2413.184	Ag II	50	-	300 h	-	2410.083	Cb	1	-	5 h	-	2406.82	Zr II	1	-	3	-
2413.097	Ir	-	-	5 h	-	2410.051	W	-	-	5	-	2406.748	V I	40	-	2	-
2413.049	Ni II	-	-	50	-	2410.01	Dy	5	-	-	-	2406.745	W	3	-	-	-
2413.045	Pt I	60	-	10	-	2409.84	Pr	-	-	8	-	2406.743	Pd II	1	-	150	-
2413.031	V I	20	-	20 h	-	2409.826	W	-	-	5	-	2406.665	Cu I	150	-	50	-
2413.010	Mo	15	-	30 h	-	2409.74	Xe	-	-	[20]	Hu	2406.658	Fe II	60	-	1 wh	I
2412.895	Co	6	-	1	-	2409.722	V	2	-	1	-	2406.63	Tm	2	-	60	Me
2412.83	In II	-	-	[2]	Ps	2409.706	Fe II	-	-	6	-	2406.59	Se	-	-	[15]	Bl
2412.809	Ir	-	-	5 h	-	2409.676	Ru	-	-	5 h	-	2406.549	Ta	60	-	-	-
2412.804	Cb	-	-	40 h	-	2409.665	Co I	8	-	-	-	2406.472	In II	-	-	[25 h]	Ps
2412.76	Mo	2	-	20 h	-	2409.62	Bi	8 Wh	-	-	-	2406.442	Hf II	12	-	25	-
2412.760	V	1	-	10	-	2409.486	W	-	-	15	-	2406.435	U	10	-	10	-
2412.757	Co I	12 r	-	-	-	2409.376	Fe II	-	-	2	-	2406.41	O II	-	-	[20]	Fl
2412.740	Mn	-	-	15	-	2409.371	Ir I	15	-	1	-	2406.395	Ni II	-	-	8	-
2412.711	Ta	5	-	-	-	2409.36	Se	-	-	[10]	Bl	2406.34	Pd II	-	-	[60]	Bx
2412.687	V I	25	-	20 h	-	2409.25	Nd	5	-	-	-	2406.267	Co I	25	-	1	-
2412.687	U	4	-	15	-	2409.229	W	-	-	15	-	2406.259	Zr	1	-	2	-
2412.645	Cb	2	-	-	-	2409.126	Co I	20	-	-	-	2406.175	W	10	-	2	-
2412.643	Ni I	20	-	8	-	2409.08	Zn	-	-	[5]	Vs	2406.071	Pd II	-	-	4	-
2412.52	I	-	-	[30]	Bl	2409.06	Kr II	-	-	[5]	Me	2406.06	Yb	1	-	3 d	-
2412.50	A	-	-	[2]	Rt	2409.031	W	10	-	2	-	2406.027	Ir I	3	-	1 h	-
2412.48	Cl II	-	-	[10]	Ks	2409.02	Ag II	-	-	10 h	m	2406.007	Ru	1	-	6	-
2412.464	Cb	5	-	100	-	2409.02	Tm	20	-	15	Me	2405.993	W	-	-	8	-
2412.442	Ir	-	-	4	-	2408.893	Mo	-	-	15	-	2405.960	Os	10	-	2	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
2405.92	Xe II	-	[2 h]	Hu	2402.736	W	2	3	-	2399.73	U	2	-	-
2405.865	Ir	2	-	-	2402.717	Ru	100	150 r	-	2399.711	Cb	5	-	-
2405.858	Mo	25	15	-	2402.71	Au	-	5	-	2399.71	Pr	-	12	-
2405.850	Cb	5 w	50 w	-	2402.657	Cb	-	4 h	-	2399.683	V	-	150	-
2405.80	Zr	-	3	-	2402.600	Fe II	10	20	-	2399.67	Re	10	5	a
2405.743	U	-	4 h	-	2402.57	Ag II	-	30 wh	-	2399.66	La II	-	20 hl	-
2405.733	V I	5	-	Me	2402.559	Co I	15	-	-	2399.65	Os	20	-	a
2405.728	Pt II	-	100 wh	-	2402.441	W	15	20	-	2399.6	Rn	-	[3]	Pe
2405.688	W	15	8	-	2402.40	C II	-	12	Fl	2399.583	Pb	35	12	-
2405.602	Re	80	-	-	2402.344	Cb	5	1	-	2399.58	W	-	3	-
2405.60	Pr	-	30	-	2402.282	Ir I	2	-	-	2399.58	Cr I	40	-	-
2405.519	Zr I	12	1	-	2402.28	Se	-	[25]	Bl	2399.575	Ir	15	2 h	-
2405.494	Cu	-	8	-	2402.233	Os	10	1	-	2399.57	Er	5	-	a
2405.490	V	2	-	-	2402.170	Co I	30 r	-	-	2399.379	Hg I	20 wh	10	Cn
2405.425	Hf II	25	50	-	2402.133	Ta	10	10	-	2399.37	Pd	-	3 h	-
2405.340	Cb	5 w	50 w	-	2402.065	Co I	10 r	3	-	2399.33	W	-	8	-
2405.291	Ru	-	3	-	2402.03	Hf II	-	2 h	-	2399.32	Mo	-	10	-
2405.27	A	-	[2]	Rt	2402.0	K	-	[10]	MI	2399.26	A	-	[2]	Rt
2405.256	W	10	15	-	2401.946	Pb	50	40	-	2399.239	Fe II	20	30	I
2405.230	V I	4	1	-	2401.927	Mo	10	40	-	2399.23	Zn I	3	-	Fl
2405.221	Rh	1	50	-	2401.902	V I	15	10	-	2399.177	In I	10	-	Ps
2405.19	Mo	3	4 h	-	2401.902	Ru	2	5	-	2399.15	Ta	3	-	-
2405.182	Ru	12	2	-	2401.874	Pt I	300	30	-	2399.14	Lu	10	50	Me
2405.169	Ni II	-	80	-	2401.873	Cb	2	-	Me	2399.06	Cr I	50	2	-
2405.13	Au	-	5	-	2401.859	W II	2 h	15	-	2399.04	W	9	2 h	-
2405.078	Os	8	20	-	2401.841	Ni I	40 r	10	-	2398.99	Zr II	5	4	-
2405.059	W	-	2	-	2401.84	Cl	-	[3]	Jv	2398.98	Ta	3	-	-
2405.054	Re	100	-	-	2401.81	Te	-	[10]	Bl	2398.95	Mo	-	3	-
2405.00	Ag II	-	8 h	-	2401.79	Xe II	-	[2]	Hu	2398.95	Rh	10	-	-
2404.886	Cb	5	50	-	2401.774	Ir I	5	1	-	2398.909	Eu	4	5 h	-
2404.882	Co I	10	-	-	2401.77	C II	-	6	Fl	2398.88	Mn	-	7 w	-
2404.882	Fe II	50	100 wh	-	2401.728	Mn	-	5	-	2398.87	Er	-	8	-
2404.87	air	-	3	Sq	2401.711	Ta	10	-	-	2398.869	V I	2	-	-
2404.81	Au I	20	4	-	2401.7	Cs	-	[2]	Bs	2398.830	Pd	-	15 h	-
2404.657	Mo	5	30	-	2401.64	Au	-	5	-	2398.76	Xe II	-	[3]	Hu
2404.643	La II	-	6	-	2401.600	Co I	30	2	-	2398.746	Ir	10	150	-
2404.61	Er	-	3	-	2401.52	Fe	3	-	-	2398.73	Re	12	-	a
2404.562	Hf II	8	10	-	2401.479	Pd II	-	5 h	-	2398.70	La	-	3 h	Me
2404.547	V	4	-	-	2401.47	La	-	2 h	-	2398.679	V I	10	-	-
2404.54	Co	1	20	-	2401.446	Zr	2	2 h	-	2398.67	W	-	3	-
2404.430	Fe II	25	40	I	2401.443	U	5 h	-	-	2398.664	Fe II	-	5 h	Do
2404.40	A II	-	[10]	Rt	2401.383	Pd	-	25 h	-	2398.63	Ni II	-	2	-
2404.33	Br	-	[4]	Bl	2401.294	W	12	3	-	2398.578	Ru	-	4 h	-
2404.278	Cb	2	5 h	Me	2401.284	U	-	15	-	2398.559	Ca I	100 R	20	IWg
2404.243	W	10	15	-	2401.168	Ir I	1	2	-	2398.55	U	2	2	-
2404.217	Ta	10	-	-	2401.130	Pd	-	10	-	2398.55	Co	4	-	-
2404.211	Cb	1	10	-	2401.127	Os	25	8	-	2398.52	Cr	-	12	-
2404.178	V	1	90	-	2401.108	Co	30	2	-	2398.5	bh B	200	-	L
2404.174	Th	6	5	-	2401.034	Cb	1	3	-	2398.482	Cb	-	30	-
2404.172	Co II	30 w	50	-	2401.002	Pt I	25	9	-	2398.39	A	-	[2]	Rt
2404.09	Hg	-	[10 d]	Dj	2400.99	Tm	3	6	Me	2398.38	Nd	-	12	-
2404.07	Yb	-	2 h	-	2400.97	Pd II	-	[12]	Bx	2398.38	In II	-	[25]	Ps
2404.03	I	-	[12]	Bl	2400.930	Ru	4	6	-	2398.37	Co	2	18	-
2403.984	Ta	10	-	-	2400.914	Cb	3	1	-	2398.32	Ta	-	3 s	-
2403.853	Os	25	3	-	2400.903	V	1	50 h	-	2398.27	W	3	-	-
2403.752	Er	-	3	-	2400.9	Rn	-	[3]	Pe	2398.268	V I	15	-	-
2403.69	Lu	-	4 h	Me	2400.884	Bi I	200 R	100	-	2398.24	Ta	6	-	-
2403.677	Ta	4	8	-	2400.87	Pr	-	8 h	-	2398.21	Fe	3	-	-
2403.66	Te	-	[30]	Bl	2400.861	W II	2 h	2 h	-	2398.18	Os	25	3	-
2403.643	Co	15	12	-	2400.837	Co I	30	2	-	2398.18	Zr	2	1	-
2403.610	Mo	25	25	-	2400.814	Zr	15	1	-	2398.15	Er	-	10	-
2403.60	Hf II	2	5	Me	2400.78	Hf II	15	15	-	2398.15	I	-	[12]	Bl
2403.57	Ti	-	[5]	El	2400.78	Pr	-	7	-	2398.149	Yt II	2	12 w	-
2403.536	Ru	6	-	-	2400.71	Nd	-	9	-	2398.128	V I	10	-	-
2403.471	Rh	1	10	-	2400.708	Rh	-	30	-	2398.12	W	4	4	-
2403.470	W	-	10	-	2400.63	Ta	4	2	-	2398.09	Mo	5	-	-
2403.429	Zr I	10	-	-	2400.62	Zr	1 h	4 h	-	2398.06	Ta	-	8	-
2403.423	U	-	30	-	2400.577	Pt II	-	20 h	Sh	2398.06	Ir	2	-	-
2403.418	Mo	6	25	-	2400.561	Co I	30	-	-	2398.01	Yb	10	5	-
2403.40	Yb	-	2	-	2400.52	Hg I	2	3	Cn	2397.98	Zr	3	-	-
2403.362	V I	4 h	-	Me	2400.505	W	1	10	-	2397.979	W	8	8	-
2403.35	Er	-	6 w	-	2400.37	Zr	-	3	-	2397.97	Mn	-	3 w	-
2403.343	Co I	15	-	-	2400.338	Fe II	4	25	-	2397.97	Rh	2	-	-
2403.335	Cu II	100	300	IBu	2400.336	W	-	6	-	2397.962	Cb	2 h	4	-
2403.28	La II	-	7	-	2400.331	Pd	-	2	-	2397.89	Ge	2	1	-
2403.250	V	1	35	-	2400.275	Fe II	-	3	-	2397.85	Ta	2	-	-
2403.223	W	3	12	-	2400.251	Cr	-	2	-	2397.83	Yb	-	3	-
2403.176	Ru	8	-	-	2400.135	W	1	5	-	2397.82	Mo	-	8	-
2403.089	Pt I	400	50	-	2400.112	Cu II	5	100	IBu	2397.782	V I	30	-	-
2403.072	W II	2 h	10	-	2400.03	B	-	2	Sy	2397.77	Cr	5	35	-
2403.029	Ir	2	1	-	2399.956	V I	30	2	-	2397.74	U	6	2	-
2403.024	V I	2	-	-	2399.92	Ta	8	8	-	2397.723	W	12	3	-
2403.00	Te	-	[100]	Bl	2399.76	Mo	-	4	-	2397.707	Zr	3	1 h	-
2402.933	Zr	5	-	-	2399.750	Ru	12	-	a	2397.697	Ru	8	8	-
2402.82	Zn I	2	-	Fl	2399.74	Hg I	10	15	Cn	2397.667	Cb	2	2	-

2397.6—2390.4 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities					
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
2397.632	V	—	4	—	—	2394.98	La II	—	4	h	Me	2392.693	V	—	2	—	—
2397.61	Os	20	3	—	a	2394.96	Hf	—	2	h	Me	2392.68	Zr II	5	6	—	—
2397.589	Zr II	4	3	—	—	2394.92	Cs	—	2	—	—	2392.63	Mo	—	6	—	—
2397.58	Mo	6	—	—	—	2394.898	Fe II	3	5	—	—	2392.60	Co	10	15	—	—
2397.499	V I	3	—	—	—	2394.841	Ni II	2	7	h	—	2392.58	Ni II	4	10	—	—
2397.43	W	5	—	—	—	2394.778	Ru	4	5	—	—	2392.56	Os	10	—	a	—
2397.42	Ta	—	2	—	—	2394.74	Mo	18	9	—	—	2392.52	W	—	2	h	—
2397.388	Co II	4	25	—	—	2394.675	Cb	—	2	wh	—	2392.46	Os	2	4	—	—
2397.36	Re	30	8	—	a	2394.62	Ti II	—	3	—	—	2392.44	Br	—	[20]	Bl	—
2397.32	U	—	20	—	—	2394.6	bh C	20	—	—	L	2392.424	Ru	80	6	—	—
2397.30	Br	—	[3]	—	Bl	2394.59	W	3	3	—	—	2392.42	Rh	—	40	—	—
2397.27	Co	4	—	—	—	2394.58	Os	3	5	—	—	2392.38	Re	20	7	a	—
2397.25	Er	7	3	—	—	2394.56	Ir	10	—	—	—	2392.37	Cr	25	2	h	—
2397.237	La II	—	7	hl	—	2394.53	Zr	1	2	—	—	2392.35	I	—	[20]	Bl	—
2397.235	Zr I	12	—	—	—	2394.516	Ni II	18	20	—	—	2392.33	Mo	2	18	—	—
2397.22	Ir	3	15	—	—	2394.48	Li I	5	R	—	Fl	2392.33	Xe	—	[3]	Hu	—
2397.21	Hf	—	2	h	—	2394.45	W	7	5	—	—	2392.23	Br	—	[10]	Bl	—
2397.21	I	—	[12]	—	Bl	2394.404	Cb	4	—	—	—	2392.23	Rh	—	15	—	—
2397.18	Cb	—	2	—	—	2394.326	Ir	30	—	—	—	2392.22	Os	12	—	a	—
2397.17	Zn II	—	[2]	—	Vs	2394.29	Os	45	10	—	—	2392.22	Ir	—	25	—	—
2397.091	W II	18	30	—	—	2394.272	V I	6	30	—	—	2392.19	Te	—	[5]	Bl	—
2397.03	Co	6	—	—	—	2394.227	Co	4	—	—	—	2392.19	Lu	30	100	Me	—
2396.98	V	—	3	wh	—	2394.20	Nd	—	20	—	—	2392.15	Al II	—	[30]	Sy	—
2396.944	Ru	3	8	—	—	2394.17	W	5	8	—	—	2392.10	Ni II	10	10	—	—
2396.93	Rh	—	5	—	—	2394.10	Ge I	2	1	—	—	2392.03	Pt	—	8	—	—
2396.81	Re	30	7	—	a	2394.06	Pr	—	7	—	—	2392.03	Co I	2	4	—	—
2396.774	Co	90	—	—	—	2394.059	Cb	5	—	—	—	2392.03	U	—	2	—	—
2396.77	Os	100	12	—	—	2394.051	Na	—	[5]	Fr	—	2392.008	Hf	—	3	h	—
2396.770	Cb	—	3	h	—	2394.02	U	—	5	—	—	2392.00	Eu	5	w	5	—
2396.712	Fe II	—	8	—	—	2394.01	Cr	—	50	—	—	2391.94	Er	3	2	h	—
2396.710	Ru	60	80	—	—	2393.971	Ru	50	—	—	—	2391.910	Cb	—	20	—	—
2396.697	V I	5	—	—	—	2393.97	Mo	—	4	—	—	2391.89	W	4	—	—	—
2396.686	Pt II	2	30	—	—	2393.93	Ir	—	25	—	—	2391.887	Co	7	w	—	—
2396.63	Ni I	12	2	—	—	2393.91	Re	18	20	w	a	2391.88	Br	—	[2]	Bl	—
2396.58	Co	5	—	—	—	2393.90	Co II	8	15	—	—	2391.872	Zr	5	—	—	—
2396.55	Rh	2	200	—	—	2393.89	Rh	—	12	—	—	2391.82	Fe	3	—	—	—
2396.48	V I	10	5	—	—	2393.86	Os	30	5	—	—	2391.78	Os	5	l	20	—
2396.43	Os	—	4	—	—	2393.836	Ru	—	12	—	—	2391.76	Pt	6	—	—	—
2396.40	Pd II	—	[4]	—	Bx	2393.835	Al II	—	[8]	Sy	—	2391.760	Ru	—	8	—	—
2396.38	Er	—	30	—	—	2393.83	Hf II	80	100	—	—	2391.745	Zr	15	—	—	—
2396.37	Ni I	12	3	—	—	2393.825	Zr	9	2	h	—	2391.72	W	—	6	—	—
2396.37	Cr I	30	3	—	—	2393.81	Zn	15	h	—	Vs	2391.72	Cu	—	20	—	—
2396.32	Zr	2	—	—	—	2393.794	Pb	2500	1000	—	—	2391.71	Mo	3	18	—	—
2396.31	Cb	—	2	w	—	2393.77	W II	4	4	—	—	2391.63	Er	—	6	—	—
2396.30	Ta	80	—	—	—	2393.67	Re	20	—	—	a	2391.59	U	—	2	—	—
2396.24	Mo	—	8	—	—	2393.660	Ir	5	—	—	—	2391.518	Th	—	15	wh	—
2396.23	Ir	—	10	—	—	2393.6	Cs	—	[2]	Bs	—	2391.474	Fe II	8	20	—	—
2396.23	Co	10	—	—	—	2393.59	Os	10	2	h	a	2391.440	Ru	—	4	—	—
2396.22	W	6	8	—	—	2393.575	V	—	500	—	—	2391.40	Mn	—	7	w	—
2396.167	Pt I	25	18	—	—	2393.52	Au	—	5	—	—	2391.369	Co	9	—	—	—
2396.12	Nd	—	15	—	—	2393.51	Se	—	[5]	Bl	—	2391.35	Al II	—	[3]	Sy	—
2396.11	Pd	—	[5]	—	Bx	2393.42	W	10	2	h	—	2391.35	Pd	—	[8]	Bx	—
2396.094	Ir I	20	5	—	—	2393.4	K	—	[10]	MI	—	2391.30	Re	20	7	a	—
2396.08	V I	2	wh	—	—	2393.362	Hf II	50	80	—	—	2391.30	W	—	5	—	—
2396.04	Re	10	3	—	a	2393.352	Zr II	8	1	—	—	2391.263	V I	25	3	w	—
2395.98	Mo	—	3	—	—	2393.34	Os	5	—	—	a	2391.25	Ir	—	25	—	—
2395.89	W	6	—	—	—	2393.27	Se	—	[5]	Bl	—	2391.178	Ir	50	—	—	—
2395.886	Ir I	15	8	—	—	2393.253	Ru	80	1	—	—	2391.176	Ru	6	3	—	—
2395.84	Cb	2	h	—	—	2393.24	U	2	2	—	—	2391.12	Os	12	—	a	—
2395.81	Er	—	4	—	—	2393.234	B II	—	2	—	—	2391.055	Ir	2	—	—	—
2395.79	Cr I	25	2	h	—	2393.23	Ta	—	20	—	—	2391.047	Zr	2	—	—	—
2395.71	W II	5	8	—	—	2393.20	Ca	—	3	Ad	—	2390.97	U	4	—	—	—
2395.66	air	—	3	—	Sq	2393.20	Mo	5	10	—	—	2390.95	Os	30	3	a	—
2395.627	Ag	4	5	—	—	2393.183	Hf II	20	40	—	—	2390.94	A	—	[10]	Rt	—
2395.625	Fe II	50	100	Wh	—	2393.18	W	—	5	—	—	2390.90	N II	—	[8]	Fl	—
2395.61	Ni	10	4	—	a	2393.179	In II	—	[18]	Ps	—	2390.89	W II	4	10	—	—
2395.52	Co	—	6	—	—	2393.12	Re	15	—	a	—	2390.868	V I	4	—	—	Me
2395.466	W	8	—	—	—	2393.113	Th	5	2	—	—	2390.84	Pd II	—	12	h	—
2395.428	V I	5	5	—	—	2393.11	Ni I	10	—	—	—	2390.801	Ir	5	—	—	—
2395.416	Co	6	2	—	—	2393.06	W	4	—	—	—	2390.800	Pt II	—	10	—	—
2395.408	Fe II	6	5	h	—	2393.037	In II	—	[10]	Ps	—	2390.78	Zn II	—	25	—	—
2395.39	Os	10	10	—	—	2393.03	Ir	—	3	wh	—	2390.78	Mo	—	25	—	—
2395.34	Br	—	[25]	—	Bl	2393.01	Er	—	2	h	—	2390.778	V I	25	l	3	—
2395.323	Cb	15	2	—	—	2392.96	Ag II	—	25	h	—	2390.755	Al II	—	[8]	Sy	—
2395.30	W	6	—	—	—	2392.96	Ni I	10	3	—	—	2390.745	Cb	—	2	w	—
2395.27	Ti	—	2	—	Sd	2392.927	W II	8	15	—	—	2390.73	Yb	10	20	—	—
2395.25	Mo	12	—	—	—	2392.92	I	—	[12	h]	Bl	2390.69	Ta	—	4	h	—
2395.20	Sb	50	15	—	—	2392.92	Cs	—	8	—	—	2390.62	Rh	10	50	w	—
2395.20	I	—	[12]	—	Bl	2392.897	V I	25	—	—	—	2390.617	Ir	40	6	—	—
2395.10	Mo	—	6	—	—	2392.89	Cr I	40	2	h	—	2390.540	Ag II	—	80	h	—
2395.10	W	5	12	—	—	2392.82	Os	5	—	—	a	2390.50	Kr II	—	[4]	—	Me
2395.09	Er	—	3	—	—	2392.78	Kr II	—	[10]	—	Me	2390.466	V	—	25	w	—
2395.089	V I	10	5	h	—	2392.75	Mo	—	6	—	—	2390.46	Ir	—	20	—	—
2395.07	B II	—	15	—	Sy	2392.71	Re	10	—	—	a	2390.44	Re	18	7	a	—
2395.04	Ta	—	25	—	—	2392.71	Ta	—	12	—	—	2390.43	Mo	—	8	—	—

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2390.430	Ru	5	4	2388.143	Th	4	2	2385.76	Te I	600	[300]
2390.420	Co	4	—	2388.10	Au II	—	2	2385.74	Cr I	25	—
2390.367	W II	10	20	2388.081	V I	25	—	2385.73	Ta	8	—
2390.223	Fe II	—	6 h	2388.05	Mo	—	3	2385.618	V	—	10 h
2390.21	Ta	—	4 l	2388.02	Rh	4	—	2385.6	Rb	—	[2]
2390.16	Hg	—	[5]	2388.009	Zr I	6	—	2385.60	Rh	—	10
2390.15	Er	7	3	2387.99	Os	12	5	2385.579	Fe	2	—
2390.149	Zr	2	1	2387.96	A II	—	[40]	2385.55	U	3	2
2390.14	Pt	3	—	2387.900	Ru	60	3	2385.50	Re	12	—
2390.13	Pd	2	4 h	2387.86	Ir	—	30	2385.49	W II	3	9
2390.120	Ru	10	3	2387.84	W	—	3	2385.49	Os	15	2
2390.11	U	2	—	2387.82	Rh	—	9	2385.44	Rh	3	25
2390.11	Os	2	—	2387.81	Mo	—	6	2385.42	He II	—	[30]
2390.10	Mo	10	20	2387.762	Ni II	6	30	2385.35	Ta	2	—
2390.075	Cb	2 h	—	2387.75	Xe II	—	[3]	2385.28	U	2	—
2390.064	Pt II	—	15	2387.75	Au I	30	10	2385.28	Mn	2	4
2390.04	Zn II	—	[5]	2387.75	Re	15	—	2385.26	W	4	12
2389.982	Co I	8	—	2387.71	W	—	2 h	2385.244	Cb	—	6
2389.971	Fe I	15	—	2387.58	Pd	—	5 h	2385.23	Yt	12	1
2389.92	Nd	—	20	2387.56	Er	—	2 h	2385.18	Hf	—	4 h
2389.86	Pd II	—	2	2387.55	Ta	—	2	2385.17	Pd	—	15 h
2389.84	Rh	—	10	2387.54	Ni I	15	2	2385.10	U	—	3
2389.84	La	—	3 hl	2387.54	W	—	2 h	2385.07	Cu II	—	10 h
2389.80	W	—	8	2387.524	Cb	10	25 wh	2385.01	Ni	10	2
2389.79	Te	—	[25]	2387.48	Re	20	6	2385.007	Fe II	8	15
2389.79	Er	—	3	2387.477	V I	3	—	2385.006	Yb	1	5
2389.76	Cr	—	25	2387.462	Co I	10	10	2385.01	Pd II	—	50 wh
2389.699	V	5	100	2387.427	Fe II	2	8	2385.00	A	—	[40]
2389.69	Br	—	[70]	2387.37	Eu	4	3	2384.996	V	—	6 h
2389.60	Ta	3	12	2387.36	Dy	8	—	2384.860	Co I	10 R	4
2389.59	Mn	—	7 w	2387.358	Pt	4	10 h	2384.85	Nd	—	10
2389.56	Tm	—	6 h	2387.29	Os	40	15	2384.847	Cb	2	4
2389.543	In I	50 R	—	2387.29	W	—	6	2384.84	Cu II	—	15
2389.540	Co I	12	20	2387.279	Fe	6	—	2384.84	Ni	8	3 h
2389.533	Pt	25	18	2387.22	U	—	5	2384.827	Zr	4	1
2389.53	Zr II	2	6	2387.183	Zr II	15	10	2384.817	W	12	12
2389.470	Ge I	2	1	2387.18	Cl	—	[3]	2384.81	Ir	4	80
2389.46	Cr I	25	—	2387.18	Mo	12	—	2384.65	Rh	25	—
2389.405	Zr	2	4	2387.16	Er	8	3	2384.65	Mo	—	12
2389.402	Fe	2	2	2387.088	Cb	2	8	2384.64	V I	2	1
2389.38	Se	—	[10]	2387.06	Ta	20	50	2384.62	Os	30	5
2389.28	Re	5	—	2387.026	Na	—	[5]	2384.557	In II	—	[5]
2389.27	Rh	—	12	2387.02	Mn	2 h	35	2384.54	Sn II	—	[15]
2389.26	W	4	2	2386.96	Mo	—	35	2384.519	Ti I	6	—
2389.258	Ru	4	—	2386.956	V I	25	10	2384.46	Pt II	—	15 h
2389.209	Zr	25	—	2386.892	Ir	50 l	15	2384.42	Hg	—	[3]
2389.20	Mo	20	18	2386.816	Ag	—	8	2384.386	Fe	20	5
2389.149	V	—	2	2386.808	Pt I	25	5	2384.38	Ni I	15	4
2389.13	Re	30	7	2386.78	Cr I	20	—	2384.28	Ta	6	18
2389.11	Ta	6	12	2386.75	Os	10	—	2384.28	La	—	3 h
2389.11	A	—	[5]	2386.75	Zn II	—	[2]	2384.276	V I	15	—
2389.08	Os	15	—	2386.74	Br	—	[25]	2384.223	Cb	—	3 w
2389.08	Al II	—	[3]	2386.727	Co	4	15	2384.166	Zr	25	1 h
2389.08	Mn	—	6 wh	2386.678	Ru	8	1	2384.15	Au	—	5 h
2389.072	W	12	3	2386.64	Cl	—	[4]	2384.10	Co	—	2
2388.96	Mo	—	10	2386.58	Er	5	4	2384.09	Er	—	4
2388.95	Tm	8	3	2386.58	Ni I	20	5	2384.05	Mn	40	3
2388.94	Br	—	[15]	2386.58	Ir	25	20	2384.04	W	—	5
2388.92	V I	25	2	2386.51	Br	—	[3]	2384.03	I	—	[30]
2388.919	Ni	10	18	2386.509	Co I	3	—	2383.97	Re	10	3
2388.916	Ir	—	3 wh	2386.506	Pt II	2	25	2383.963	Ru	12	—
2388.915	Co II	10	35	2386.45	W	—	8	2383.95	Zn II	—	[2]
2388.87	Os	6	—	2386.413	V I	20	—	2383.87	Mo	—	20
2388.80	W	—	5	2386.404	Cb	5	—	2383.84	Er	—	4
2388.774	Pb	40	18	2386.40	Rh	6	2	2383.836	Cb	2 h	1 h
2388.63	Br	—	[5]	2386.396	Fe II	2	5	2383.789	Ir	15	3 h
2388.627	Fe II	25	30	2386.363	Co II	10	25	2383.72	Ta	6	25
2388.55	W	—	8	2386.36	W	3	—	2383.67	Tm	15	4
2388.42	U	2	3	2386.33	Ag II	—	25 h	2383.641	Pt I	30	20
2388.41	Yb	1	3	2386.24	Mo	—	8	2383.63	Sb	75	20
2388.410	Ir	10	2 h	2386.24	Pd II	—	5 wh	2383.59	Rh	—	25
2388.39	Au II	—	3	2386.216	Ru	2	1	2383.54	W	2 h	4
2388.387	Fe II	—	2	2386.19	Cr I	20	—	2383.52	Mo	12	—
2388.376	Co	3	—	2386.17	W	8	—	2383.50	A II	—	[40]
2388.37	Ta	2	25	2386.153	Ir	15	—	2383.48	Re	25	5
2388.30	Zn I	2	—	2386.14	Xe	—	[3]	2383.46	Co II	15	30
2388.289	Pd II	2	40	2386.14	Rh	80	8	2383.450	Ir	2	—
2388.267	Cb	5	25 w	2386.05	Mo	—	18	2383.442	Ru	—	12
2388.260	V II	—	4	2386.04	Os	2	20	2383.44	U	—	3
2388.25	Al II	—	[2]	2385.95	Fe I	4	—	2383.436	V	2	4 h
2388.24	N II	—	[3]	2385.863	Ir	20	3	2383.40	Pd II	—	50 wh
2388.210	Zr	2 h	2 h	2385.816	V	—	100	2383.40	Rh	50	10
2388.202	Fe II	—	3	2385.816	Co	9	—	2383.36	Mo	—	10
2388.189	Ru	20	8	2385.79	W	—	5	2383.33	Cr I	20	—
2388.177	Co I	5	—	2385.78	Hf II	—	3	2383.25	Te I	500	300

2383.2—2375.0 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2383.241	Fe II	8	12	—	—	2380.33	W	3	5	—	—	2377.85	Mo	—	—	5	—
2383.24	Pd II	—	2	—	—	2380.302	Hf II	30	60	—	—	2377.85	Rb	—	—	[5]	Fa
2383.21	Os	15	—	a	—	2380.262	V I	4	—	—	—	2377.832	Th	10	8	—	—
2383.21	Ag II	—	25	—	—	2380.24	Re	15	5	a	—	2377.83	Er	6	2 h	—	—
2383.20	W	—	3	—	—	2380.2	Cs	—	[2]	—	—	2377.81	Rh	—	50	—	—
2383.168	Ir	10	5	—	—	2380.18	Ta	2	—	—	—	2377.67	Pr	—	7	—	—
2383.055	Fe II	6	2	—	—	2380.178	V I	3	—	—	Me	2377.63	Cd II	—	15	—	—
2383.05	Mo	—	4	—	—	2380.17	W	3	3	—	—	2377.61	Os	50	15	—	—
2383.001	V	8	80	—	—	2380.16	Ce	—	50	—	—	2377.53	Ga II	—	[3]	Sy	—
2382.986	W	15	3	—	—	2380.143	Cb	—	10 wh	—	—	2377.521	Fe	1	5 h	—	—
2382.93	U	—	2	—	—	2380.00	Mo	—	12	—	—	2377.52	Ce	—	8 W	—	—
2382.893	Fe II	—	4	—	—	2380.00	Ta	6	—	—	—	2377.51	U	—	2	—	—
2382.89	Rh	50	5	—	—	2379.990	Hg I	10	10	—	Cn	2377.39	W	3	5	—	—
2382.85	Dy	2	—	—	—	2379.97	Re	7	7	—	a	2377.38	Re	20	6	a	—
2382.82	Nd	—	10	—	—	2379.95	Cr	8	—	—	—	2377.275	Pt II	15	25	—	—
2382.756	Pd II	2	2 h	—	—	2379.88	A	—	[2]	—	Rt	2377.275	Ir I	25	5 w	—	—
2382.741	Ru	1	4	—	—	2379.845	Ru	10	15	—	—	2377.23	Fe	5	—	—	—
2382.673	In II	—	[18]	Ps	—	2379.84	Os	25	8	—	—	2377.215	Co I	12	2	—	—
2382.67	W	3	12	—	—	2379.79	Re	15	8	a	—	2377.2	A	—	[2]	Rt	—
2382.64	Rh	—	30	—	—	2379.73	Bi	3	—	—	To	2377.18	W	—	7	—	—
2382.593	In II	—	[40]	Ps	—	2379.72	Ni I	15	2	—	—	2377.180	In II	—	[2]	Ps	—
2382.57	Pd	—	40 h	—	—	2379.69	Ti I	100 R	200 R	—	—	2377.17	Ta	2	15 l	—	—
2382.467	V	—	100 w	—	—	2379.65	Eu	2	—	—	—	2377.14	Er	—	6	—	—
2382.46	Os	30	5	a	—	2379.64	Os	15	5	—	—	2377.12	Re	9	2 h	a	—
2382.41	Au II	—	5	—	—	2379.638	Pd	—	15 h	—	—	2377.12	Mo	—	30	—	—
2382.39	Mo	—	12	—	—	2379.57	Ru	—	10	—	Ex	2377.11	Ce	—	10 W	—	—
2382.36	Zr	1 h	2	—	—	2379.56	W	—	8	—	—	2377.10	Ra II	—	[8]	Rs	—
2382.355	Fe II	3	—	—	—	2379.54	Cs	—	[2]	—	—	2377.086	V I	2	2	—	—
2382.34	W II	3	10	—	—	2379.5	K	—	[18]	—	—	2377.06	Ir	—	8	—	—
2382.335	Co	2	4	—	—	2379.50	Pd II	—	2 h	—	—	2377.03	W	8	—	—	—
2382.25	Pd	—	2 h	—	—	2379.42	La	—	60	—	—	2377.03	Os	50	30	—	—
2382.246	Cb	2	—	—	—	2379.39	Os	40	9	—	—	2376.970	Co I	6	—	—	—
2382.22	Zn I	4	—	—	Fl	2379.379	Ir	25	8	—	—	2376.839	Cd II	—	5	—	—
2382.06	Hg	—	[8]	Ps	—	2379.358	Co I	4	—	—	—	2376.73	Mn	—	20	—	—
2382.039	Fe II	40 r	100 R	—	—	2379.275	Fe II	12	15	—	I	2376.71	Pd II	2	2	—	—
2382.0	bh C	30	—	—	L	2379.154	Co I	4	—	—	—	2376.66	In II	—	[10]	Ps	—
2381.993	Ru	50	150	—	—	2379.150	V	4	20	—	—	2376.562	W	8	2 h	—	—
2381.97	Dy	8	—	—	—	2379.14	Ge I	3	4	—	—	2376.55	U	3	4	—	—
2381.83	Fe I	3	—	—	—	2379.112	Cb	—	4 h	—	—	2376.53	V	—	2 wh	—	—
2381.82	Ir	8	50	—	—	2379.11	Re	5	12	a	—	2376.51	Os	10	4 w	a	—
2381.79	W	—	10	—	—	2379.04	W	2 h	—	—	—	2376.446	Co	4	—	—	—
2381.79	I	—	[20]	—	—	2378.996	In I	10	—	—	Ps	2376.435	Fe II	3	50 h	—	—
2381.78	Pd II	—	[2]	—	Bx	2378.98	Pr	—	10 s	—	—	2376.400	Cb	8	60	—	—
2381.752	Co	4	12	—	—	2378.980	Fe II	2	2	—	—	2376.39	W	4	—	—	—
2381.72	Er	—	5	—	—	2378.937	Cb	2 h	—	—	—	2376.38	Cu II	3	30	—	—
2381.69	Lu	—	30 h	—	Me	2378.93	Rh I	8	—	—	—	2376.3	A	—	[2]	Rt	—
2381.622	Ir	30	2 h	—	—	2378.908	Co	5	—	—	—	2376.29	Os	25	5	a	—
2381.57	W	8	—	—	—	2378.85	Er	—	6	—	—	2376.27	Cu	—	25	—	—
2381.557	Zr	4	2	—	—	2378.81	Hf II	—	2 h	—	Me	2376.24	Au I	25	3	—	—
2381.52	Ta	8	40	—	—	2378.74	Os	25	5	a	—	2376.15	Os	2	10	—	—
2381.52	Th	—	10	—	Ex	2378.721	Pd	—	9 h	—	—	2376.12	Pr	—	8	—	—
2381.48	Cr	3	25	—	—	2378.65	Mo	6	3	—	—	2376.12	U	2	2	—	—
2381.47	Mo	—	12	—	—	2378.622	Co II	25	50 w	—	—	2376.069	W	10	3	—	—
2381.41	Er	—	3	—	—	2378.60	W II	5	12	—	—	2376.03	Ni I	15	5	—	—
2381.36	Pt	—	12	—	—	2378.60	U	—	8	—	—	2376.02	Os	5	—	a	—
2381.33	W II	3	10	—	—	2378.59	Ca	—	2	—	Ad	2376.01	Zn I	3	—	Fl	—
2381.30	Rb	—	[100]	—	Fa	2378.54	Os	25	5 w	—	a	2375.96	Re	7	—	a	—
2381.251	Co I	4	—	—	—	2378.527	Fe II	—	3	—	—	2375.96	In II	—	[10]	Ps	—
2381.18	A	—	[2]	—	Rt	2378.52	Ta I	2	—	—	—	2375.91	Ta	4	2 h	—	—
2381.18	As I	75	4	—	Me	2378.42	Re	4	—	a	—	2375.85	Tm	—	15	—	Me
2381.14	Re	40	7	a	—	2378.408	Al I	40	20	—	Gn	2375.84	Ir	—	10	—	—
2381.13	Ta	15	40	—	—	2378.33	Hg	20	20	—	—	2375.835	Th	5	3	—	—
2381.128	Cb	—	5	—	—	2378.31	Ta	5	18	—	—	2375.83	U	2	2	—	—
2381.10	W	3	7	—	—	2378.297	Ir	2	—	—	—	2375.83	Re	18	7	a	—
2381.024	Pd	25	9	—	—	2378.263	V	2 h	—	—	—	2375.82	Cs	—	[2]	Bs	—
2381.00	Hf II	20	40	—	Me	2378.243	Zr I	10	—	—	—	2375.74	W	4	10	—	—
2380.99	I	—	[12]	—	Bl	2378.16	U	—	35	—	—	2375.73	O II	—	[15]	Fl	—
2380.918	V	6	50	—	—	2378.147	Ti I	10	—	—	—	2375.631	Ru	50	80	—	—
2380.90	Re	12	5	a	—	2378.141	In I	15	—	—	Ps	2375.58	Ir	12	—	—	—
2380.82	Ni	2 h	—	—	—	2378.14	Os	30	5	a	—	2375.57	Rh	5	2 h	a	—
2380.82	Os	30	20	a	—	2378.12	W II	4	8	—	—	2375.52	Kr II	—	[20]	Me	—
2380.81	Ti I	5	4	—	—	2378.09	Pr	—	10	—	—	2375.5	Rn	—	[7]	Pe	—
2380.79	Ni I	10	2	—	—	2378.063	Pt	—	10	—	—	2375.46	Eu	3	20	—	—
2380.759	Fe II	12	15	I	—	2378.06	Nd	—	2	—	—	2375.45	Os	10	—	a	—
2380.744	Sn	10	10	—	—	2378.04	Xe	—	[2]	—	Hu	2375.44	Mo	—	2	—	—
2380.73	W	—	8	—	—	2377.993	Hf	—	7	—	—	2375.421	Ni II	10	30	—	—
2380.695	Co I	4	—	—	—	2377.99	I	—	[30]	—	Bl	2375.39	W	—	2 h	—	—
2380.65	Se	—	[5]	—	Bl	2377.983	Ir	30	15	—	—	2375.31	Tm	—	15	—	Me
2380.57	Lu	—	2	—	Me	2377.977	Cb	3	10	—	—	2375.271	Ru	80	5	—	—
2380.558	Zr	15	—	—	—	2377.958	Pt	10	4	—	—	2375.192	Fe II	—	15	I	—
2380.485	Co I	20 d	10	—	—	2377.938	Ir	4	—	—	—	2375.18	Co II	9	20	—	—
2380.44	Rb	—	[125]	—	Fa	2377.92	W	4	—	—	—	2375.090	Ir	10	20	—	—
2380.41	Mo	12	9	—	—	2377.916	Pd II	—	30	—	—	2375.075	Th	8	4	—	—
2380.39	Yb	2	—	—	—	2377.87	Fe	2	—	—	—	2375.07	Re	25	7	a	—
2380.34	Ti	20	60	—	Sd	2377.87	U	2	15	—	—	2375.06	Os	10	25	—	—

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2375.06	Ag	300 wh	300 wh	2375.58	W	3	12	2370.04	W	5	25
2375.03	W	-	12	2375.57	Zr I	8	1	2370.018	Ru	4	5
2374.97	Pd II	-	[3]	2375.51	Co	-	2 w	2369.98	Nd	-	10
2374.94	Te	-	[30]	2375.37	Ce	-	50	2369.97	Mo	-	10
2374.873	Fe	2	-	2375.33	Zr	7	1	2369.97	A	-	[2]
2374.87	Mo	-	8	2375.33	Hf II	3	4	2369.96	B	-	20
2374.84	Rh	-	10	2375.27	Mo	25	6	2369.960	Fe II	3	15 h
2374.777	Ru	-	4	2375.25	Ti I	3	-	2369.952	Cb	5	25
2374.758	W	10	-	2375.23	I	-	[12]	2369.927	Co I	9	-
2374.749	Co	3	-	2375.230	Cb	-	8 w	2369.92	Te	-	[50]
2374.72	Ta	2	12 h	2375.175	V	-	100	2369.887	Cu II	20	30
2374.652	Ru	-	3	2375.154	Pd II	5	50	2369.883	Ag	-	2
2374.649	V	-	2	2375.13	Pr	-	6	2369.74	W	3	7
2374.60	Ti I	3	-	2375.117	Mn	12	-	2369.73	Ra II	-	[50]
2374.517	Fe I	6	-	2375.084	Al I	18	10	2369.676	Co I	15	5
2374.51	Os	25	-	2375.07	Mo	-	-	2369.67	As I	40 r	20
2374.460	W	12	12	2375.06	Er	-	3 h	2369.62	Xe	-	[4]
2374.456	Co I	4	-	2375.03	Tb	-	10	2369.58	Rh I	10	20 wh
2374.422	Zr I	20	10 h	2375.95	Ti I	10	-	2369.564	Ir	5	-
2374.36	Zn I	3	-	2375.94	U	-	2	2369.445	Fe I	8	1
2374.33	Os	25	3	2375.93	Hf	-	3 h	2369.44	Yb	1	10
2374.30	Mn	-	30	2375.92	W	-	10	2369.36	Au	-	4
2374.26	W	-	2 h	2375.915	Ru	2	9	2369.33	W	-	2 h
2374.17	Eu	3	6	2375.860	Co I	6	12	2369.32	Ta	-	12
2374.163	Cb	-	5	2375.85	Os	-	4	2369.309	Al	10	4
2374.162	Pd II	-	3	2375.85	W	8	-	2369.29	Re	30	7
2374.144	W	12	2 h	2375.74	A	-	[20]	2369.28	Ti I	4	-
2374.07	U	2	-	2375.689	Zr	5	-	2369.28	A II	-	[2]
2374.02	Hg I	10 h	-	2375.66	Rh	3	-	2369.24	Os	50	12
2373.960	Cb	2 w	5 w	2375.617	Pt II	-	20	2369.22	Ni II	1	20
2373.952	Ru	-	4	2375.60	Au II	-	5	2369.22	Ir	-	30
2373.94	Ta	-	35	2375.60	Co	-	3	2369.18	La	2	2
2373.93	Mo	-	5	2375.58	Ta	10	10	2369.174	Bi	5	-
2373.92	Pd II	2	2 h	2375.54	Mo	-	8	2369.08	Lu	-	5
2373.89	Yb	2	8	2375.53	U	-	3	2369.07	Pd II	-	[4]
2373.862	Co I	9	-	2375.52	Re	30	7	2369.06	U	2	4
2373.846	Th	3	3	2375.51	Pd	-	2 h	2368.98	Zr	1	2 h
2373.83	Dy	2	-	2375.48	Rh	3	25 wh	2368.97	W	-	15
2373.82	Er	10	-	2375.440	Co	15	-	2368.96	Th	-	5
2373.73	Cr I	60	-	2375.428	Fe I	8	-	2368.95	Mo	-	15
2373.730	Fe II	6	15	2375.428	Hf II	6	8	2368.945	Cb	-	5
2373.70	Ag II	-	2 h	2375.427	Th	-	12	2368.94	Kr II	-	[3]
2373.68	Kr II	-	[4]	2375.42	Pr	-	15	2368.90	Re	12	7
2373.624	Fe I	2	-	2375.38	Zr	3	1 h	2368.87	Rh	6	-
2373.623	Sb	75	25	2375.325	Ga	3	5	2368.866	Cb	4	-
2373.62	Os	4	5	2375.31	Er	-	2 h	2368.80	Pr	-	15
2373.52	Re	7	15	2375.26	Mo	-	15	2368.68	Xe II	-	[3]
2373.43	W	4	4	2375.21	W	-	5	2368.595	Fe II	15	25
2373.4	Cs	-	[2]	2375.18	Os	50	15	2368.551	Bi II	2	10
2373.385	Co	20	2	2375.152	Zr	2	2 h	2368.54	Pd II	-	[4]
2373.37	Mn II	4	50	2375.07	V	-	500	2368.54	Re	7	40
2373.362	Al I	200 R	100 R	2375.07	Rh	3	40	2368.49	Cr I	30	2
2373.32	Pt	-	10	2375.06	Ta	-	18	2368.473	Bi II	2	12
2373.29	Re	7	3	2375.05	W	-	5	2368.47	Hf II	-	4 h
2373.25	Pr	-	8	2375.96	Rb	-	[2]	2368.46	Ta	2	-
2373.22	Rb	-	[70]	2375.885	Cu II	-	5 h	2368.409	Ir	8	-
2373.172	Ir	5	10 wh	2375.881	W	10	2	2368.40	U	3	-
2373.17	Nd	-	7	2375.88	U	-	4	2368.387	Bi II	2	15
2373.14	Au II	-	5	2375.78	Re	12	30	2368.35	W	4	10
2373.132	Al I	100 R	30	2375.77	As I	50 r	3	2368.34	Rh	50	2
2373.12	Os	-	10	2375.76	Ta	5	25	2368.33	Ir	-	12
2373.108	Ba I	12	2 w	2375.74	Co	-	8	2368.276	Pt I	35	25
2373.09	Co	4	6	2375.732	Cb	-	4 wh	2368.253	Bi II	3	20
2373.075	Cb	5	-	2375.70	Os	25	10	2368.226	Sr II	3	8
2373.06	Yb	1	5	2375.67	Ir	-	6	2368.22	Lu	-	2
2373.060	V	-	200	2375.60	W II	2	18	2368.21	Ta	-	4 h
2373.04	In II	-	[10 h]	2375.58	Rh	10	-	2368.195	Bi II	1	12
2372.98	Pd	-	10	2375.53	Os	15	-	2368.17	Cu	2	15
2372.96	Mo	-	30	2375.509	Co	10	-	2368.14	Nd	-	10
2372.94	U	2	-	2375.5	air	-	3	2368.14	Re	6	6
2372.930	Zr II	15	8	2375.496	Fe II	8	6	2368.13	U	2	3
2372.91	Os	25	3	2375.49	La II	-	2	2368.114	Al	4	1
2372.91	Eu	2	-	2375.428	Zr	3	-	2368.051	Th	5	3
2372.90	In II	-	[8 h]	2375.39	Mo	3	8	2368.04	Ir	25	125
2372.89	Cr	40	3	2375.39	Cr I	40	3	2367.97	Ti	-	2 w
2372.86	Te	-	[10]	2375.372	Ir I	15	5 w	2367.960	Pd	10	60
2372.831	Co I	15	2	2375.35	Ta	-	5	2367.95	Au	-	5 h
2372.80	Ta	3	30	2375.27	Dy	2	-	2367.94	Pd II	-	2
2372.79	W	5	-	2375.25	K	-	[30]	2367.933	Cd II	-	2
2372.774	Ir I	100	40	2375.23	Mo	2 h	10	2367.93	Os	2	3
2372.725	Cb	2	50	2375.226	Al	5	5	2367.90	Re	9	-
2372.71	Se	-	[25]	2375.173	Ru	60	-	2367.88	Cr I	20	-
2372.65	Os	20	5 w	2375.15	Zr	2	4 h	2367.80	Ce	-	10
2372.627	Fe II	10	-	2375.13	U	2	-	2367.775	Ru	4	-
2372.583	V	-	15	2375.104	Yb	-	3 h	2367.72	Zn I	2	-

2367.7—2360.5 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2367.71	Ta	—	3	—	2365.50	La II	2	3	—	2363.062	W	15	5	—
2367.69	Re	30	8	a	2365.49	Al II	—	[6]	Sy	2363.052	Zr	3	4	—
2367.683	Ir	4	—	—	2365.48	Pd II	—	15 h	—	2363.05	As I	5	—	Me
2367.68	Er	6	4	—	2365.47	Er	—	8	—	2363.05	Rh	8	4 wh	—
2367.680	W	10	2 h	—	2365.45	Yb	—	15	Me	2363.042	Ir	50	25	—
2367.66	Os	5	—	a	2365.448	W	12	5	—	2362.98	Mo	—	8	—
2367.655	V	—	80	—	2365.39	Cd II	—	10	—	2362.95	Pd	—	[8]	Bx
2367.618	Hf II	2	3	—	2365.36	Pt	—	8	—	2362.90	Re	20	7	a
2367.616	Al	2	[10]	—	2365.32	Re	20	7	a	2362.89	Yb	10	20	—
2367.59	Pd II	—	[2 h]	Bx	2365.299	Cb	—	2	—	2362.772	Co	2	—	—
2367.58	Yb	—	10 h	Me	2365.29	Ir	—	5	—	2362.77	Os	50	12	—
2367.52	Rb	—	[40]	Fa	2365.238	Pt II	—	8	—	2362.77	Pd	7	—	—
2367.51	Cu	—	4 h	—	2365.216	Cb	5	20 l	—	2362.76	U	3	2	—
2367.4	air	—	4	—	2365.19	U	—	5	—	2362.74	Kr II	—	[6]	Me
2367.39	U	2	3	—	2365.15	O II	—	[10]	Fl	2362.70	Ti	—	2 w	—
2367.389	Ni II	8	15	—	2365.15	Cr	10	3	—	2362.634	V	2	25	—
2367.36	W	2 h	4	—	2365.08	Rb	—	[70]	Fa	2362.62	Dy	3	—	—
2367.360	Cb	—	3	—	2365.07	Os	15	1	a	2362.60	Xe II	—	[2]	Hu
2367.35	Os	50	80	—	2365.067	Co I	18 d	4	—	2362.58	Re	20	7	a
2367.33	Zr I	6	—	Ks	2364.97	Tl	—	2	—	2362.57	Ce	—	10	—
2367.24	Ta	2	25	—	2364.95	Zr II	1	2	—	2362.51	W	—	8	—
2367.22	Ru	6	10	—	2364.95	W	8	—	—	2362.486	Cb	—	20	—
2367.20	Co	—	9	—	2364.89	Au	—	15 h	—	2362.42	Mo	—	6	—
2367.195	Cd II	—	10	—	2364.85	Os	15	30	a	2362.41	Os	25	8	—
2367.12	U	—	3	—	2364.827	Cs	—	2	—	2362.35	U	2	5	—
2367.10	Mn	6	—	—	2364.826	Fe II	15	30	I	2362.342	Hf	—	2	—
2367.10	Tm	8	3	Me	2364.81	Pd II	—	10 h	—	2362.34	Rb	—	[10]	Fa
2367.09	Rh	5	30	—	2364.72	In II	—	[10]	Ps	2362.333	Co I	8	—	—
2367.062	Al I	150R	50 R	—	2364.71	Cr I	20	8	—	2362.322	Pd II	5	35	—
2367.047	Pd II	9	12	—	2364.71	Os	9	—	a	2362.24	Ir	—	4	—
2367.02	Re	6	4	a	2364.66	Rh	10	25	—	2362.23	Cr I	25	2 h	—
2367.00	Te	—	[10]	Bl	2364.640	Ir	10	2	—	2362.21	Th	3	1	—
2366.984	Th	3	5	—	2364.61	Pd	—	[7]	Bx	2362.21	Nd	—	4	—
2366.96	Mo	2 h	20	—	2364.59	Zr II	—	2	—	2362.21	Os	10	2	a
2366.952	W	12	3	—	2364.58	Pt	—	8 h	—	2362.179	Ag II	—	80 w	—
2366.91	Mn	—	40	—	2364.56	Au I, II	20	8	—	2362.10	W	—	5	—
2366.893	V	—	4	—	2364.51	Os	5	—	a	2362.08	Tl I	10 s	—	Fl
2366.88	Rh	3	50	—	2364.5	bh B	50	—	L	2362.06	Ni I	15	10	—
2366.85	Cr I	60	60	—	2364.486	Ir	8	—	—	2362.049	Cb	—	25 w	—
2366.78	Yb	3	12	Me	2364.378	V	2	2	—	2362.019	Fe II	8	15	I
2366.78	A	—	[10]	Rt	2364.37	Mo	8	—	—	2361.97	Gd	—	3	Ex
2366.67	W II	—	4	—	2364.325	Cb	5 h	—	Me	2361.92	Rh	30	7	—
2366.63	Rb	—	[2]	Fa	2364.28	Rb	—	[150]	Fa	2361.92	U	—	2	—
2366.595	Fe II	10	20	I	2364.27	U	—	3	—	2361.82	Yt I	8	—	—
2366.57	Os	8	—	a	2364.251	Co	3	—	—	2361.76	Mn	2 h	30	—
2366.54	Ni II	—	10	—	2364.24	Ta	10	40	—	2361.749	Zr II	3	6	—
2366.470	Pt II	—	15 h	—	2364.227	Ru	—	5	—	2361.724	Fe II	—	4	—
2366.38	Mo	6	20	—	2364.22	W	5	15	—	2361.67	Ir	3	25	—
2366.34	Cr I	15	3	—	2364.14	Cu II	—	10	—	2361.66	Os	15	—	—
2366.31	V	—	3	—	2364.14	A	—	[40]	Rt	2361.64	Te	—	[5]	Bl
2366.292	Pd II	—	15	—	2364.14	Rh	—	25	—	2361.62	W	6	3	—
2366.28	Os	14	2	a	2364.06	Pd	—	2 h	—	2361.57	Cu	—	8	—
2366.218	Cb	—	8	—	2364.001	Ag II	—	100 Wh	—	2361.53	Co II	10	15	—
2366.217	Zr II	2	2 h	—	2363.996	Ir	10	2	—	2361.484	Pd	9	10	—
2366.19	Cd II	—	[3]	Tk	2363.98	Ga	—	2	—	2361.48	Re	4	6	a
2366.182	W	12	2 h	—	2363.95	Cu	8	2 h	—	2361.46	U	3	2 h	—
2366.15	Cr I	10	3	—	2363.94	Fe	10 w	—	—	2361.45	Rh	3 w	7	—
2366.12	Os	12	2	a	2363.94	Er	7	2 h	—	2361.43	Cu	12	—	—
2366.09	Mo	7	10	—	2363.93	Pd	5	6	—	2361.42	As	—	2	Ro
2366.06	Ir	—	8	—	2363.92	U	6	2	—	2361.31	Pd II	—	25 h	—
2366.054	Co I	5	—	—	2363.90	Os	25	10 w	—	2361.25	Mo	—	3	—
2365.99	Rh	3	—	a	2363.89	W	4	12	—	2361.23	Cu II	2	[3]	—
2365.98	Hf II	8	10	Me	2363.88	B II	—	15	Sy	2361.23	Tm	1	60	Me
2365.97	Rb	—	[80]	Fa	2363.87	Nd	—	18	—	2361.19	W II	6	8	—
2365.97	Cr I	25	8	—	2363.86	Pt	—	15	—	2361.17	Rh	10	3	—
2365.957	Cb	2	—	—	2363.842	Zr II	5	3	—	2361.14	Co	—	9	—
2365.95	Tm	6	4	Me	2363.82	Re	15	2 h	a	2361.14	U	—	2	—
2365.86	Os	15	2 w	a	2363.82	Si	—	[5]	Sy	2361.123	Pd II	—	5	—
2365.851	Fe	6 h	—	—	2363.787	Co II	25	50	—	2361.09	Yb	2	6	Me
2365.85	Mo	—	8	—	2363.69	Mo	—	10	—	2361.09	Ta	10	—	—
2365.848	W	12	4	—	2363.635	Fe II	2	2	—	2361.052	Cb	—	3 wh	—
2365.8	K	—	[5]	MI	2363.594	Cb	2	2	—	2360.96	Zn I	2	—	Fl
2365.771	Fe	3	5	Do	2363.540	Pd II	—	25 w	—	2360.95	Pd II	—	2 h	—
2365.764	Ir I	15	3	—	2363.53	Os	10	2	a	2360.95	Ga	—	3	—
2365.740	Cb	—	5	—	2363.523	Zr I	25	—	—	2360.93	Re	6	5	a
2365.7	bh C	20	—	L	2363.51	B	—	2	—	2360.797	Pd	—	4	—
2365.69	Re	15	4	a	2363.48	Yb	—	4 h	Me	2360.77	U	—	2	—
2365.67	Ag II	—	20 h	—	2363.46	W II	5	8	—	2360.730	Ir	40	25	—
2365.66	Ni I	10	2	—	2363.43	U	—	4	—	2360.724	Ru	8	2	—
2365.65	Tl	—	10	Sd	2363.35	Se	—	[5]	Bl	2360.684	Ir	4	—	—
2365.630	V	—	4	—	2363.33	Os	25	15 w	—	2360.643	Cd	2 h	—	—
2365.624	Cb	—	20 w	—	2363.31	Gd	1	4	—	2360.63	Ni I	10	3	—
2365.614	Pd	—	4 h	—	2363.26	W	—	2 h	—	2360.555	Ru	30	—	—
2365.55	Pr	—	10	—	2363.21	Cu I	10	7	—	2360.53	Pd	12	—	—
2365.52	Kr II	—	[3]	Me	2363.09	Th	—	15	—	2360.509	Co	4	15	—

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2360.495	Sb	20	5	-	-	2357.797	V	2 h	60	-	-	2355.65	Ta	3	18	-	-
2360.44	Os	10	-	-	a	2357.75	S	-	[8]	-	Bl	2355.64	Os	5	-	-	a
2360.433	W	15	5	-	-	2357.73	Mo	8	-	-	-	2355.627	Ru	-	5	-	-
2360.422	Zr	3	1	-	-	2357.65	W	5	-	-	-	2355.620	Co I	7	8	-	-
2360.42	Xe	-	[2]	-	Hu	2357.64	Os	15	4	a	-	2355.55	Er	-	4	-	-
2360.343	V	5	5 w	-	-	2357.64	Mn	2	10	-	-	2355.546	Cb	-	15 l	-	-
2360.34	Sn II	-	[10]	-	Mc	2357.630	Pd II	3	40	-	-	2355.52	Ir	10	50	-	-
2360.304	Cb	2	7	-	-	2357.61	Re	5	-	-	a	2355.51	Au	-	5	-	-
2360.293	Fe II	10	8	-	I	2357.60	A	-	[60]	-	Rt	2355.510	Pd II	6	25	Wh	-
2360.13	I	-	[12]	-	Bl	2357.59	U	-	6	-	-	2355.45	Re	6	20	a	-
2360.12	W	-	2 h	-	-	2357.577	Pt	20	10	-	-	2355.448	V I	-	5	-	-
2360.097	Ru	20	-	-	-	2357.57	Mo	-	12	-	-	2355.42	Mo	5	25	-	-
2360.09	Mn	-	7	-	-	2357.56	Nd	-	2	-	-	2355.39	Yt	8	-	-	-
2360.07	A II	-	[40]	-	Rt	2357.541	V	-	20	-	-	2355.33	Pd II	-	5 h	-	-
2359.997	Fe II	10	8	-	I	2357.502	Co	10	-	-	-	2355.328	Fe I, II	3	-	-	-
2359.79	Ta	-	30	-	-	2357.46	W	-	5	-	-	2355.32	W	-	5	-	-
2359.73	Mo	-	40	-	-	2357.445	Cb	-	6 w	-	-	2355.284	Os	15	25	-	-
2359.589	Fe II	-	3	-	-	2357.436	Zr II	8	20	-	-	2355.28	Mo	-	10	-	-
2359.58	Pb	-	3	-	-	2357.432	Pd	2	15	-	-	2355.251	Th	4	2	-	-
2359.578	Ir	10	-	-	-	2357.43	Rh	2	50 wh	-	-	2355.25	B	-	6	-	-
2359.57	Rh	-	50	-	-	2357.40	Dy	7	-	-	-	2355.230	V	4	4	-	-
2359.53	Te	-	[5]	-	Bl	2357.33	Mo	-	4	-	-	2355.223	Fe II	-	3	-	-
2359.51	W	-	3	-	-	2357.31	Ti	-	3	-	-	2355.22	Mo	10	-	-	-
2359.49	Cu	5	-	-	-	2357.31	Ir	-	30	-	-	2355.155	Cu II	-	25	IBu	-
2359.47	Ga	-	2	-	-	2357.30	Ta	10	-	-	a	2355.14	Ti II	1	4	-	-
2359.47	Re	8	-	-	a	2357.28	Lu	-	4	-	Me	2355.12	U	2	2	-	-
2359.46	Mn	3	8	-	-	2357.27	W	-	5	-	-	2355.08	Te	-	[5]	-	Bl
2359.45	U	2	2	-	-	2357.25	Os	25	5	-	-	2355.06	Ni I	10	2	-	-
2359.45	Ta	-	5 h	-	-	2357.20	Si	-	[5]	-	Sy	2355.06	Re	10	-	-	a
2359.38	Lu	-	2	-	Me	2357.16	Mo	-	7	-	-	2355.05	Co	2	-	-	-
2359.372	Ir	2	25	-	-	2357.104	Pt I	30	20	-	-	2355.01	Mo	-	10	-	-
2359.34	Mo	-	5	-	-	2357.06	Re	12	3	-	a	2355.004	Ir	20	-	-	-
2359.33	Er	-	3	-	-	2357.04	Tm	3	80	-	Me	2354.949	Cb	-	2 w	-	-
2359.23	Os	8	-	-	a	2357.03	B	-	6	-	Sy	2354.90	Te	-	[5]	-	Bl
2359.21	Ge	2	-	-	-	2357.008	Fe II	-	10	-	-	2354.889	Fe II	10	10	-	I
2359.21	W	-	4	-	-	2356.99	Pb II	-	4	-	-	2354.845	Sn	150 R	150 R	m	-
2359.18	Rh	15	100	-	-	2356.98	Rb	-	[40]	-	Fa	2354.797	Pd II	-	25	-	-
2359.16	Ta	-	15	-	-	2356.92	Dy	8	-	-	-	2354.79	A II	-	[5]	-	Rt
2359.105	Ru	-	12	-	-	2356.92	Os	15	10 w	-	-	2354.76	U	2	3	-	-
2359.104	Fe II	15	20	-	I	2356.9	bh C	12	-	-	L	2354.75	Re	15	-	-	a
2359.08	Zr	-	4 h	-	Ks	2356.90	Ta	2 h	2	-	-	2354.67	Mo	-	7	-	-
2359.08	Co	-	2	-	-	2356.88	In II	-	[10]	-	Ps	2354.669	V	2	5	-	-
2359.04	Ir	-	3 h	-	-	2356.87	Ni I	10	3	-	-	2354.62	Ti II	1	3	-	-
2358.94	Hg	-	[5 d]	-	Dj	2356.86	U	-	5	-	-	2354.61	W	12	5	-	-
2358.87	U	-	2	-	-	2356.81	Mn	7	10	-	-	2354.50	Zr	2	2 h	-	-
2358.858	Ag II	-	100 Wh	-	-	2356.81	Cu	6	-	-	-	2354.467	Bi	15 h	5	-	-
2358.85	Ni I	15	3	-	-	2356.80	W	4	-	-	-	2354.466	Fe II	5	15	-	-
2358.84	Ga	-	3	-	-	2356.78	Co	-	2	-	-	2354.46	Mo	10	-	-	-
2358.81	W	10	20	-	-	2356.72	Xe	-	[5 h]	-	Hu	2354.42	Cs	-	[2]	-	BS
2358.791	Ru	20	15	-	-	2356.651	Cu II	5	25	-	-	2354.41	Co	5	-	-	-
2358.79	Rh	-	10 w	-	-	2356.63	Ni	10	-	-	-	2354.35	I	-	[20]	-	Bl
2358.776	Pt II	-	5	-	-	2356.615	Ir	10	-	-	-	2354.35	Se	-	[25]	-	Bl
2358.754	Ir	-	25	-	-	2356.60	Te	-	[5]	-	Bl	2354.32	Cr I	12	2 h	-	-
2358.745	V	-	300	-	-	2356.552	Ir	40	5	-	-	2354.319	Sr I	5 R	-	-	ISn
2358.72	Yt	10	2 h	-	-	2356.51	Re	30	7	-	a	2354.220	Pd	-	18	-	-
2358.71	Er	5	5	-	-	2356.48	Ta	-	10	-	-	2354.216	Hg	-	20	-	St
2358.70	K II	-	[50]	-	Bn	2356.46	W	-	3	-	-	2354.185	Yt I	12	2	-	-
2358.698	In I	5 wh	-	-	Ps	2356.41	Ni II	4	18	-	-	2354.18	Er	15	2 h	-	-
2358.68	Os	6	30	-	-	2356.35	Si	-	[10]	-	Sy	2354.179	Co	2	-	-	-
2358.671	Co I	10	-	-	-	2356.33	Pt	20	9	-	-	2354.16	Mo	-	12	-	-
2358.59	Re	9	-	-	a	2356.316	Ir	15	6	-	-	2354.14	A	-	[20]	-	Rt
2358.57	Nd	-	10	-	-	2356.301	Cb	3 h	10	-	-	2354.14	Tm	-	6	-	Me
2358.53	Cu	12	-	-	-	2356.30	Rh	-	35	-	-	2354.10	Ta	-	3 h	-	-
2358.51	Er	12	-	-	-	2356.268	Co I	10	-	-	-	2354.100	Ru	4	1	-	-
2358.50	Os	4 w	-	-	a	2356.25	Zr	2	-	-	-	2354.07	Ti	3	12	-	-
2358.48	Hg	2	-	-	Di	2356.23	Tm	-	10	-	Me	2354.064	Zr	3	-	-	-
2358.47	Rh I	10	3 h	-	-	2356.2	Ti	-	10	-	Cx	2354.04	Cu	10	-	-	-
2358.45	Mn	8	25	-	-	2356.05	Os	10	2	-	a	2354.038	Cb	4	12	-	-
2358.23	Te	-	[10]	-	Bl	2356.05	Ta	3	25	-	-	2354.0	Gd	2	-	-	Ds
2358.176	Co I	20	30	-	-	2356.031	Ir	4	-	-	-	2353.99	Ir	-	5	-	-
2358.165	Ir	25	2	-	-	2356.031	Cb	2	10	-	-	2353.96	Cu II	-	[2]	-	Sh
2358.08	Re	8	-	-	a	2356.02	Mo	-	4	-	-	2353.86	Ta	4	20	-	-
2358.07	Nd	-	3	-	-	2355.96	Ir	-	35	-	-	2353.82	Cb	4	-	-	-
2358.072	W	10	-	-	-	2355.96	W	-	3	-	-	2353.81	W	3	-	-	-
2358.05	Rb	-	[5]	-	Fa	2355.915	Fe I	-	2	-	-	2353.783	Cb	5 w	2	-	-
2358.02	La	2	3 h	-	Me	2355.91	Cu	4	-	-	-	2353.77	Pr	-	15	-	-
2358.02	Si	-	[5]	-	Sy	2355.906	Th	2	5	-	-	2353.77	Nd	-	20	-	-
2357.97	U	2	-	-	-	2355.900	Zr I	30	1	-	-	2353.73	Co	2	-	-	-
2357.954	Ir	8	50	-	-	2355.89	Re	12	-	-	a	2353.72	Mo	-	20	-	-
2357.93	W	-	3	-	-	2355.81	La	2	5 h	-	Me	2353.708	Ni	8	-	-	-
2357.920	Ag II	15	100 h	-	-	2355.79	W	-	3	-	-	2353.69	W	2 h	5	-	-
2357.914	Ru	60	100	-	-	2355.728	Pd	2	25 h	-	-	2353.68	Kr	-	[50]	-	Me
2357.9	Cs	-	[2]	-	BS	2355.69	Br	-	[15]	-	Bl	2353.640	Ir	10	5	-	-
2357.886	Sn	6	4	-	-	2355.685	Cb	2	4	-	-	2353.595	Ru	6	-	-	-
2357.82	Ti	-	6	-	-	2355.67	Tm	-	7	-	Me	2353.507	Cb	4	-	-	-

3 53.4—2346.4 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities					
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
2353.454	W	—	4	—	—	2350.86	W	—	2 h	—	—	2348.748	Cb	—	3 w	—	—
2353.45	Ag II	—	2	—	Ex	2350.85	Ni II	—	5	—	—	2348.74	Te	—	[5]	—	Bl
2353.42	A	—	[10]	—	Rt	2350.835	Be I	12	—	—	—	2348.74	Ni I	10	1	—	—
2353.42	Co II	10	35	—	—	2350.765	In II	—	[5]	—	Ps	2348.660	Cb	—	5 wh	—	—
2353.40	La	—	2	—	Me	2350.735	In II	—	[10]	—	Ps	2348.61	Os	3	—	a	—
2353.38	Ni	5	6	—	—	2350.712	Cb	2 h	—	—	—	2348.610	Be I	2000 R	50	—	—
2353.36	W	3	5	—	—	2350.70	Pd	6	25 h	—	—	2348.60	Lu	—	2	—	Me
2353.30	Cu	7	—	—	—	2350.685	Be I	25	2	—	—	2348.59	Ta	—	12 s	—	—
2353.21	Re	7	—	a	—	2350.66	Ti II	2	10	—	—	2348.586	Zr	15	1	—	—
2353.207	Zr II	1	2 h	—	—	2350.63	Re	18	7	a	—	2348.58	Mo	—	9	—	—
2353.19	Si	—	[2]	—	Sy	2350.61	Ir	—	25	—	—	2348.56	I	—	[12]	—	Bl
2353.117	Ir	4	50 w	—	—	2350.594	Co I	6	—	—	—	2348.56	W	2 h	—	—	—
2353.10	Tm	—	40	—	Me	2350.577	Ru	3	6	—	—	2348.548	Pt II	3	20	—	—
2353.10	Rb	—	[40]	—	Fa	2350.536	W	12	—	—	—	2348.46	Co	—	2 W	—	—
2353.025	Hf	5	—	—	—	2350.53	Eu	3	6	—	—	2348.46	Nd	—	20	—	—
2352.99	Pd	4	7	—	—	2350.53	Mo	—	5	—	—	2348.327	Ru	50	—	a	—
2352.99	Os	30 I	8	—	—	2350.50	A	—	[20]	—	Rt	2348.303	Fe II	5	20	—	—
2352.97	Ta	2	35	—	—	2350.488	Cb	1	4	—	Me	2348.301	Ir	20	—	—	—
2352.96	W	8	8	—	—	2350.48	Re	18	7	a	—	2348.3	K	—	[20]	—	MI
2352.951	Ru	6	8	—	—	2350.467	Ni	10	—	—	—	2348.30	V	—	25	—	—
2352.933	Mn	12	6	—	—	2350.45	Hg	—	[2]	—	Dj	2348.151	W	8	—	—	—
2352.86	Kr II	—	[2]	—	Me	2350.43	Lu	—	3	—	Me	2348.099	Fe II	5	20	—	—
2352.854	Co I	15 d	4	—	—	2350.399	Fe I	3	—	—	—	2347.99	Ti II	—	20	—	—
2352.838	Cb	10 w	20	—	—	2350.37	W	—	12	—	—	2347.967	W	10	10	—	—
2352.78	W	—	5	—	—	2350.35	Rh	—	50	—	—	2347.909	Bi	5	—	—	—
2352.73	A	—	[5]	—	Rt	2350.30	Cd	—	[10]	—	Es	2347.90	Cr	2	—	—	—
2352.65	Au II	25	—	—	—	2350.280	Co I	12	2	—	—	2347.90	Rh	—	15	—	—
2352.625	Ir	15	2	—	—	2350.23	Os	30	50	—	—	2347.90	Cu	4	—	—	—
2352.61	Mo	15	2 h	—	—	2350.2	K	—	[10]	—	Sg	2347.85	Rh	8	—	a	—
2352.60	Nd	—	4	—	—	2350.20	Zr	2	2 h	—	—	2347.826	Co	—	8	—	—
2352.60	Dy	4	—	—	—	2350.20	Al	—	[8]	—	Sy	2347.82	Ga	—	2	—	—
2352.56	Rb	—	[2]	—	Fa	2350.15	Ce	—	50	—	—	2347.79	Mo	—	20	—	—
2352.54	Pr	—	6	—	—	2350.12	Te	—	[25]	—	Bl	2347.76	Pd II	—	[25]	—	Bx
2352.48	Hg I	12 h	15 h	—	Cn	2350.11	Mo	—	12	—	—	2347.69	Rh	—	10 wh	—	—
2352.47	Rh I	20	20 w	—	—	2350.07	Pr	—	18	—	—	2347.660	Co I	4	—	—	—
2352.44	W	—	2 h	—	—	2350.054	Ir	15	5 wh	—	—	2347.65	Cd	2	—	—	Hr
2352.44	Fe	—	8 h	—	—	2350.05	Ni	—	3 h	—	—	2347.64	Re	3	10	—	a
2352.342	Cb	5	20	—	—	2350.04	Os	12	—	a	—	2347.64	W II	—	3	—	—
2352.21	Co	—	4	—	—	2350.028	Cb	2	—	—	—	2347.577	Ba	30	40	—	Sz
2352.201	Sb	12	4	—	—	2349.94	Ti	3	12	—	—	2347.54	Al II	—	[12]	—	Sy
2352.177	V	5	200	—	—	2349.89	Mo	—	25	—	—	2347.527	Pd	18	18	—	—
2352.17	Os	—	4 w	—	—	2349.857	Cd	2	—	—	—	2347.52	Ni I	12	2	—	—
2352.17	Nd	—	4	—	—	2349.853	Sb	8	1 h	—	—	2347.47	Tm	—	15	—	Me
2352.124	Cb	3	—	—	—	2349.85	U	2 h	8	—	—	2347.46	Mo	—	8	—	—
2352.10	Re	30	5	a	—	2349.85	Cu	5	—	—	—	2347.444	Hf II	80	125	—	—
2352.08	Dy	3	—	—	—	2349.84	As I	250 R	18	—	Me	2347.44	Ti II	2	5	—	—
2352.04	W	—	2 h	—	—	2349.82	W	6	10	—	—	2347.39	Co II	10	25	—	—
2351.99	Ir	5 h	10 wh	—	—	2349.81	Os	40	6 I	—	—	2347.38	Os	30	5	—	—
2351.978	Co I	4	—	—	—	2349.806	V	3 w	150	—	—	2347.306	Pd II	3	25 w	—	—
2351.97	Os	1	5	—	—	2349.80	Rb	—	[80]	—	Fa	2347.30	Zn II	—	[2]	—	Vs
2351.92	Tm	—	10	—	Me	2349.78	Mo	10 w	—	—	—	2347.246	Ir	4	2 h	—	—
2351.911	Cs	—	2	—	—	2349.70	Yt	8	—	—	—	2347.17	Pd II	—	[10]	—	Bx
2351.87	U	—	20	—	—	2349.68	Rh	3	125	—	—	2347.160	Pt	18	12	—	—
2351.857	Pd II	—	30	—	—	2349.662	Ir	5	—	—	—	2347.151	V	—	150	—	—
2351.848	Co	—	7	—	—	2349.63	Dy	3	—	—	—	2347.121	Co	—	4	—	—
2351.78	W	5	—	—	—	2349.61	Re	12	9	a	—	2347.11	Au II	—	5	—	—
2351.72	Th	—	5	—	—	2349.60	U	—	15	—	—	2347.11	Zr II	12	2	—	—
2351.72	Os	25	4	a	—	2349.59	Zr	10	1	—	—	2347.042	V I	15	20	—	—
2351.671	Cb	2 h	—	—	—	2349.54	Si	—	[2]	—	Sy	2347.01	U	2	2	—	—
2351.656	Zr II	1	8	—	—	2349.48	Os	—	4 w	—	—	2346.98	Ta	—	20 h	—	—
2351.64	Rh	—	5	—	—	2349.421	Cb	—	2 h	—	—	2346.949	Cb	—	2 h	—	—
2351.634	Cb	—	2 h	—	—	2349.40	Re	12	7	a	—	2346.879	V	—	25	—	—
2351.58	Au II	—	5	—	—	2349.39	Yb	1	8	—	Me	2346.87	W	—	3	—	—
2351.56	Xe	—	[2 h]	—	Hu	2349.38	Pd	—	[2]	—	Bx	2346.80	Zn II	—	[3]	—	Vs
2351.55	Os	25	6 W	a	—	2349.36	Ru	60	4	—	—	2346.80	Si	—	[5]	—	Sy
2351.537	V	—	50	—	—	2349.32	W	8	12	—	—	2346.79	Re	8	—	a	—
2351.53	Tm	—	18	—	Me	2349.32	Hf II	—	2 h	—	—	2346.77	Rh	2	30	—	—
2351.50	Rb	—	[5]	—	Fa	2349.309	Ir	5	10 wh	—	—	2346.74	Co	2	—	—	—
2351.466	W	—	8	—	—	2349.30	Nd	—	15	—	—	2346.722	Pt	8	3	—	—
2351.45	In	—	3	—	—	2349.29	Se	—	[5]	—	Bl	2346.72	Pr	—	10	—	—
2351.408	Pt	—	12	—	—	2349.26	Er	3	—	—	—	2346.69	W	5	—	—	—
2351.406	Ir	12	—	—	—	2349.22	Mn	3	15	—	—	2346.686	Cb	3	—	—	—
2351.391	Co I	10	—	—	—	2349.213	Cb	—	15	—	—	2346.65	Mo	—	8	—	—
2351.338	Pd II	10	60	—	—	2349.16	Co	—	2	—	—	2346.63	W	—	7	—	—
2351.334	Ru	60	4	—	—	2349.10	Bi I	10	—	—	To	2346.63	Ni I	10	3	—	—
2351.28	Mo	10	—	—	—	2349.04	Tm	—	7	—	Me	2346.625	Cd	2	—	—	—
2351.26	V	2	50	—	—	2349.02	Pd	—	15	—	—	2346.62	Re	15	4	a	—
2351.22	Te	—	[25]	—	Bl	2348.98	Mo	—	7	—	—	2346.60	Co	3	18	—	—
2351.215	Hf II	100	150	—	—	2348.91	U	2	2	—	—	2346.561	In I	5	—	—	Ps
2351.191	Fe II	2	7	—	—	2348.89	Tm	—	8	—	Me	2346.529	Cb	3	10 w	—	—
2351.18	Xe	—	[2 h]	—	Hu	2348.86	La II	2 h	2	—	Me	2346.49	Os	10	1	a	—
2351.17	Co	—	10	—	—	2348.84	Mo	3	9	—	—	2346.463	Pd II	2	25	—	—
2351.05	W II	—	5	—	—	2348.83	Mn	3	15	—	—	2346.44	Rh	2	100	—	—
2350.96	Cu	3	—	—	—	2348.82	Cu II	15 d	20	—	—	2346.42	Ta	3	2 h	—	—
2350.92	Zr II	3 h	2	—	—	2348.80	Re	9	—	a	—	2346.409	Ru	2	8	—	—

Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Intensity Spk., [Dis.]	R
2346.35	Ti	2	3	-	2343.746	Ag II	-	3 h	-	2341.374	W II	12	12	-
2346.349	Ru	5	8	-	2343.744	W	5	-	-	2341.37	U	-	8	-
2346.343	V	-	125	-	2343.74	Os	15	-	a	2341.326	Zr I	5	-	-
2346.32	I	-	[30]	Bl	2343.72	Mo	-	6	-	2341.25	Mn	2 h	-	-
2346.31	W	4	-	-	2343.68	Cb	-	3 h	-	2341.22	Ti	4	15	-
2346.293	Fe II	1	2	-	2343.659	Ir	3	-	Ab	2341.19	Lu	-	3	Me
2346.21	Os	8	4 w	a	2343.64	Ta	-	25	-	2341.18	Ni II	3	20	-
2346.162	Co I	7	2	-	2343.63	Cu	4	-	-	2341.17	Tm	5	3	Me
2346.16	U	-	12	-	2343.606	Ir I	20	8	-	2341.13	Pd	-	3	-
2346.14	Ir	3	8	-	2343.57	U	5	-	a	2341.12	Sn	-	5	Ar
2346.13	Cu	2	25	-	2343.51	Ag	4	5	-	2341.12	Co	-	20	-
2346.090	Ni	7	-	-	2343.492	Fe II	10	50	-	2341.07	W	-	5	-
2346.02	Ta	-	18	-	2343.49	Ni II	2	15	-	2341.061	Ru	3	8	-
2346.00	Zr	7	-	-	2343.456	Zr	4	-	-	2340.993	Pt II	-	8 h	Sh
2345.92	W II	4	1	-	2343.40	Br	-	[5]	Bl	2340.992	Co I	5	-	-
2345.92	Al II	-	[6]	Sy	2343.390	Pt I	25	-	-	2340.94	Ta	3	30	-
2345.91	Bi	12	5 wh	To	2343.324	Hf II	60	80	-	2340.932	Fe II	-	2	-
2345.903	In I	8	-	Ps	2343.32	Re	-	6	a	2340.93	Tm	5	5	Me
2345.75	Os	25	5 w	-	2343.273	Cb	2	3	-	2340.87	Zr I	25	-	-
2345.69	W	-	12	-	2343.27	Ga	-	6	-	2340.86	U	2	2	-
2345.64	Re	15	7	a	2343.236	Pt II	-	10	-	2340.812	Yt II	2	10 h	-
2345.60	Tm	-	20	Me	2343.176	Ir I	40	10	-	2340.75	Yb	-	3 h	Me
2345.58	Os	6	-	a	2343.13	W	8	3	-	2340.691	Ru	60	4	-
2345.55	Hg II	10	30	Nu	2343.13	Mo	-	12	-	2340.69	Os	30 l	20	-
2345.54	Ni I	18 r	-	-	2343.109	V	-	250	-	2340.65	Th	-	10	-
2345.540	Mn	3	-	-	2343.07	Lu	2	15	Me	2340.64	W	-	4	-
2345.52	Pd II	-	[8]	Bx	2343.04	Ca	-	2	-	2340.62	Eu	5	-	-
2345.51	Cd	10 h	-	Hr	2343.02	Rh	-	10 w	-	2340.59	Mn	-	30	-
2345.50	Co	6	7	-	2342.973	Ir I	5	1	-	2340.55	Hg I	3	2	Dj
2345.47	Al II	-	[2]	Sy	2342.87	U	-	3	-	2340.501	Ru	-	5	-
2345.444	Ni II	18 r	6	-	2342.846	Ru	60	40	-	2340.49	Cr	-	10	-
2345.431	Hg I	3	5	Cn	2342.843	Cb	-	3	-	2340.486	V I	50	3	-
2345.41	Hf II	4	5	Me	2342.793	Co I	2	-	-	2340.47	Cs	-	[2]	Bs
2345.41	Rh	10	3 h	a	2342.78	Os	15	6	-	2340.47	Nd	-	7	-
2345.35	Rb	-	[100]	Fa	2342.777	Pt II	-	10	-	2340.47	Mo	30	50	-
2345.346	Cb	2	5	-	2342.75	Re	15	3	a	2340.449	Fe II	-	2	-
2345.34	Os	5	-	a	2342.72	Ru	60	10	a	2340.44	Os	10	-	a
2345.340	Fe II	-	20	-	2342.72	W	-	3	-	2340.40	Ir	-	5	-
2345.33	Cr	8	60	-	2342.697	Ir I	15	-	-	2340.39	Yb	2	8 h	Me
2345.33	V	-	3	-	2342.654	Os	2 h	-	-	2340.39	Hf	-	8 h	Me
2345.30	Re	15	6	a	2342.63	Mo	-	7	-	2340.35	U	-	5	-
2345.26	Ni II	-	10	-	2342.52	Ta	-	25	-	2340.31	Re	3 h	10	a
2345.16	Os	4	-	a	2342.499	Ir I	15	5	-	2340.276	Cb	4	-	-
2345.10	Er	2 h	-	-	2342.48	Os	20	2	a	2340.269	Ir	4	-	-
2345.070	Fe	20 h	-	-	2342.47	Rh	3	-	-	2340.26	Pd II	-	[3]	Bx
2344.937	Pd II	-	20	-	2342.47	W	8	2 h	-	2340.26	Fe	3 h	-	-
2344.91	W	10	-	-	2342.46	Pd	5	3	-	2340.19	Se	-	[10]	Bl
2344.90	Os	4	-	-	2342.460	Ru	2	10 h	-	2340.19	Au II	-	10	-
2344.89	Rh	-	20	-	2342.418	Co	2	-	-	2340.186	In I	10	-	Ps
2344.84	W	-	8	-	2342.4	Ga	-	3	Wb	2340.178	Pt I	25	18	-
2344.83	Re	25	18	a	2342.38	I	-	[150]	Bl	2340.154	Cb	2 h	-	-
2344.816	Ru	-	3 Wh	-	2342.37	Rh	3	25	a	2340.15	K	-	[10]	Ml
2344.74	Os	15	3	a	2342.35	U	2	-	-	2340.047	Al	2	1	-
2344.74	Pd II	2	-	-	2342.34	Zr	3	2 h	-	2340.042	Ir	10	35	-
2344.73	Mo	-	12	a	2342.30	Ti	4	18	-	2340.04	Cu	6	-	-
2344.69	Al II	-	[3]	Sy	2342.30	K II	-	[10]	Bn	2340.040	Cb	8	30	-
2344.667	Yb	5	20	-	2342.27	Mo	-	7	-	2340.039	Pd II	9	5	-
2344.653	Mo	3	12	-	2342.252	Fe II	-	3	-	2340.02	Ta	2	35	-
2344.641	Cb	2	-	-	2342.18	Xe	-	[2 h]	Hu	2339.925	Ru	1	5	-
2344.64	Co	2	8	-	2342.136	V	4	125	-	2339.90	W II	-	8	-
2344.58	U	3	2	-	2342.12	W	3	-	-	2339.81	Os	5	20	-
2344.56	Cr	-	15	-	2342.06	Re	5	5	a	2339.80	A	-	[10]	Rt
2344.534	Ru	5	1	a	2342.05	Tm	-	15	Me	2339.76	Pr	-	15	-
2344.513	Cb	2	-	-	2342.01	Ru	10	-	a	2339.74	Cu II	2	3 wh	-
2344.49	Nd	-	8	-	2341.963	Fe II	-	2	-	2339.72	W II	2 h	5	-
2344.47	Xe II	-	[6]	Hu	2341.93	Pd	-	2	-	2339.684	V I	25	-	-
2344.38	Kr II	-	[10]	Me	2341.92	W II	-	5	-	2339.64	Pd	10	2	-
2344.36	I	-	[30]	Bl	2341.92	Os	30 l	5	a	2339.59	Cb	-	3 w	-
2344.31	Os	20	-	a	2341.898	Ag	-	4	-	2339.58	Fe	10 wh	-	-
2344.28	Au II	-	5	-	2341.89	Rb	-	[40]	Fa	2339.552	Co I	5	-	-
2344.280	Fe II	6	20	I	2341.85	La II	-	4	Me	2339.52	Pt	-	15	-
2344.260	Co II	15	15	-	2341.84	Er	10	-	-	2339.49	Ru	20	-	a
2344.22	A	-	[4]	Rt	2341.81	W	8	6	-	2339.418	Fe II	-	8	-
2344.21	Re	9	-	a	2341.788	Co	4	-	-	2339.385	Zr	1	2 h	-
2344.14	Cb	-	4	-	2341.73	Tm	1	20	Me	2339.37	Hg	-	[8]	Ps
2344.080	Ru	8	-	a	2341.697	Ir	-	20	-	2339.36	Mo	-	8	-
2344.03	As I	25	-	Me	2341.64	Au II	-	5	-	2339.33	W	2 h	-	-
2344.03	Re	5	-	a	2341.61	Ta	2	35	-	2339.31	O II	-	[7]	Mh
2343.959	Fe II	5	10	-	2341.59	Mo	9	60	-	2339.31	Ir	-	30	-
2343.95	Ni II	-	4	-	2341.55	Ga	-	2	-	2339.26	Pd	-	3	-
2343.89	Os	20	-	-	2341.54	Hg	-	[10]	Dj	2339.22	Os	7	-	a
2343.88	Ir I	2	-	Ab	2341.526	Ir	-	5	-	2339.18	Mo	-	2	-
2343.83	Te	-	[10]	Bl	2341.525	Pt II	-	4 h	-	2339.179	Pt II	-	15 wh	-
2343.830	V	-	5	-	2341.42	Mo	10	-	-	2339.178	Ag II	-	4	-
2343.81	Re	5	5	a	2341.38	Cu	2	-	I	2339.16	W II	3	10	-

2339.0—2331.4 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2339.053	Co I	4	10	—	2336.600	Pd II	3	30	—	2334.13	Ca	—	2	Ad
2339.02	Gd	—	3	Ex	2336.586	Ni II	—	150	—	2334.13	Ta	2	20	—
2338.97	Si	—	[5]	Sy	2336.57	W	—	2 h	—	2334.128	Co I	5	12	—
2338.95	Mo	—	10	—	2336.50	Os	15	3 l	a	2334.066	Pd II	—	4	—
2338.92	U	—	10 h	—	2336.492	Co	2	—	—	2334.06	W II	5	2 h	—
2338.740	Cb	3	—	—	2336.48	Re	3	10	a	2334.06	Au II	—	5 h	—
2338.717	Co	—	5	—	2336.42	Mo	—	9	—	2334.05	Mo	—	3	—
2338.68	Rh	3	5	a	2336.42	U	—	2 h	—	2333.962	Co	3	—	—
2338.671	Ru	2	3	—	2336.413	Cb	3	4 w	—	2333.907	Ru	12	20	—
2338.671	Co I	10 d	—	—	2336.411	Pd II	2	30	—	2333.85	Ta	—	10	—
2338.67	Ge	2	1	—	2336.377	Ru	—	3	—	2333.839	Ir I	40	10	—
2338.67	Cu	8	—	—	2336.37	Nd	—	4	—	2333.795	Bi I	12	—	Om
2338.65	Ta	—	15	—	2336.35	W	—	2 h	—	2333.77	Hf II	—	4 h	—
2338.65	Os	30 l	6	a	2336.25	S	—	[25]	Bl	2333.768	W II	8	9	—
2338.63	Ga	2	—	Uh	2336.241	Co II	6	15	—	2333.69	Rh	—	3	—
2338.596										2333.658	Cb	3	—	—
2338.49	Ni I	4	—	—	2336.23	Pr	—	10	—	2333.63	Mo	—	4	—
2338.48	U	—	4	—	2336.22	Ni	—	2	—	2333.603	V	—	50	—
2338.476	W	10	—	—	2336.20	Cu II	3	20	—	2333.565	Ru	5	20	—
2338.47	Re	30	6	a	2336.19	Mo	—	10	—	2333.50	Os	10	2	a
2338.47	Mo	—	7	—	2336.19	Os	5	8	—					
2338.41	Cb	2 h	—	—	2336.15	Te	—	[15]	Bl	2333.48	Cr	—	25	—
2338.36	Tm	2	50	Me	2336.13	Re	25	10	a	2333.45	Nd	—	3	—
2338.3	bh C	20	—	L	2336.105	V	2	50	—	2333.38	Rb	—	[80]	Fa
2338.29	Er	3	6	a	2336.05	Hg	—	[2 w]	Dj	2333.33	Re	15	4	a
2338.283	Ga	3	4	—	2335.992	Co I	10 d	3	—	2333.32	V I	10	—	—
2338.28	Ta	6	30 l	—	2335.984	Ru	2	15	—	2333.31	Rh I	8	125	—
2338.25	Hf II	—	10 h	—	2335.93	W	—	6	—	2333.298	Ir I	25	8	—
2338.14	W	3	—	—	2335.840	U	2	2 h	—	2333.26	Pd	3	—	—
2338.10	Pd II	—	[2]	Bx	2335.840	Ru	1	8	—	2333.26	Mn	2	25	—
2338.093	Cb	—	8 w	—	2335.80	Mo	—	10	—	2333.14	W	7	5	—
2338.05	Pt	—	10	—	2335.75	Re	40	9	a	2333.07	Co I	6	—	—
2338.01	Os	20	—	a	2335.75	Ta	2	20	—	2333.04	Re	15	3	a
2338.005	Fe II	15	35	I	2335.74	Ru	12	—	a	2333.03	Rb	—	[2]	Fa
2337.956	V	—	18	Me	2335.63	Zr	—	2 h	Ks	2333.0	bh C	5	—	L
2337.95	Yb	2	40	Me	2335.617	Cb	2 h	15	—	2332.98	Cd II	—	[2]	Tk
2337.936	Co	3 w	9	—	2335.57	Pd	—	[5]	Bx	2332.97	Nd	—	20	—
2337.90	Br	—	[25]	Bl	2335.56	W	—	3	—	2332.968	Hf II	40	50	—
2337.82	Ni I	4 d	3	—	2335.52	I II	—	[15 d]	Mu	2332.883	Cb	—	2 h	—
2337.816	Ru	2	6	—	2335.492	V	3	50	—	2332.81	Se I	—	[30]	Rd
2337.79	A	—	[60]	Rt	2335.49	Th	—	3	—	2332.81	Pd	—	[2]	Bx
2337.78	Zr II	1	8	—	2335.45	I II	—	[60]	Bl	2332.796	Fe II	15	40	I
2337.78	Os	10	—	a	2335.43	Pd	—	[3]	Bx	2332.755	In I	3	—	Ps
2337.77	Ti	—	2	—	2335.42	Xe II	—	[2]	Hu	2332.68	Mo	7	18	—
2337.77	Pd II	—	25	—	2335.42	Rb	—	[5]	Fa	2332.64	Os	10	—	a
2337.756	Cb	3	—	—	2335.419	Yb	3	15 h	—	2332.578	Yt I	10	2 h	—
2337.743	W II	8	20	—	2335.38	Mo	—	5	—	2332.544	Pd II	—	25 w	—
2337.74	Cr	3	12	—	2335.337	V	2	3	—	2332.54	U	—	2	—
2337.72	Mo	12	3	—	2335.314	Cb	3 h	10 w	—	2332.50	W	5	—	—
2337.71	Ce	—	5 W	—	2335.285	Ir I	5	—	—	2332.45	S	—	[15]	Bl
2337.71	Nd	—	8	—	2335.28	Rh	—	15	—	2332.44	Hf II	7	10	Me
2337.64	Os	12	4	a	2335.269	Ba II	60 R	100 R	—	2332.426	Pb	60	30	—
2337.59	Hf	—	3 h	—	2335.250	Hf II	—	2	—	2332.42	Cs	—	[8]	Bs
2337.54	Cd	5 h	—	Hu	2335.20	W II	6	8	—	2332.32	Te	—	[15]	Bl
2337.535	Ir I	10	2	—	2335.190	Pt II	8	25	Sh	2332.277	Ru	—	12 h	—
2337.526	Fe	—	2 h	—	2335.107	Co I	15	—	—	2332.274	Ag	—	3	—
2337.52	Pr	—	15	—	2335.03	Re	10	—	a	2332.26	Mo	3	—	—
2337.514	Bi	5	—	—	2335.00	Tm	—	8	Me	2332.239	Ir	4	30	—
2337.51	Rh	4	—	a	2334.958	Ir	—	25	—	2332.19	Ta	10	15	—
2337.5	Rn	—	[7]	Pe	2334.94	Mn	—	25	—	2332.17	Hf II	2	—	—
2337.49	Ni I	8 d	5	—	2334.92	Mo	—	20	—	2332.14	Mn	—	25	—
2337.474	Mn	2	—	—	2334.91	Te	—	[5]	Bl	2332.14	Os	30	4 w	a
2337.42	Mo	6	12	—	2334.88	Co	—	4	—	2332.12	Mo	8	80	—
2337.39	Cu	2	—	—	2334.88	Ta	3	18	—	2332.095	Co	10	—	—
2337.33	Hf II	30	30	—	2334.81	Cb	3	25 w	—	2332.028	Fe	—	4 h	—
2337.324	V	—	80	—	2334.808	Sn	100 R	100 R	—	2332.02	W	—	6	—
2337.26	Ga	—	2	—	2334.80	Mo	—	10	—	2331.98	Ta	10	20	—
2337.17	W	8	—	—	2334.77	Rh	25 l	500	—	2331.92	W	8	5	—
2337.13	V	—	100	—	2334.67	Zr	6	—	—	2331.85	—	—	2	—
2337.12	Re	9	—	a	2334.580	Ni II	8	20	—	2331.791	Pt II	2	4	—
2337.09	Ni I	10	4	—	2334.57	In II	—	[50 h]	Ps	2331.79	Tm	2	25	Me
2337.05	Lu	—	3	Me	2334.53	Ti	4	9	—	2331.780	Ru	12	15 h	—
2337.05	Rb	—	[125]	Fa	2334.528	Fe	3	—	—	2331.771	V	—	300	—
2337.04	Mo	—	8	—	2334.505	Ir I	25	5	—	2331.74	Re	25	—	a
2336.99	Co	—	10	—	2334.49	Re	9	—	a	2331.70	Ni I	10 h	2	—
2336.94	U	—	2	—	2334.48	Si	—	[2]	Sy	2331.695	Co	2	—	—
2336.92	Br	—	[5]	Bl	2334.446	V I	25	40 s	—	2331.64	Yt	7	—	—
2336.861	Fe II	—	20 h	—	2334.39	Cr	5	10	—	2331.63	I II	—	[5 d]	Mu
2336.855	Ru	—	10 h	—	2334.38	Mo	—	3	—	2331.59	W	—	3	—
2336.84	Rh	1	125	—	2334.36	Re	20	8	a	2331.57	Zr	—	100 w	Ks
2336.807	Co	2	—	—	2334.33	Ti	—	5	—	2331.54	I II	—	[40]	Bl
2336.80	Os	50	80	—	2334.330	Ir I	10	2	—	2331.45	A	—	[60]	Rt
2336.74	Re	12	2	a	2334.30	W	4	—	—	2331.45	Os	2	4	—
2336.70	W	6	10	—	2334.25	Os	—	2 w	—	2331.43	Ru	20	—	a
2336.68	Ni II	—	30	—	2334.213	V	—	250	—	2331.413	Pd II	—	40	—
2336.65	Mo	—	9	—	2334.13	I	—	[30]	Bl	2331.40	Re	20	2 h	a

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2331.370	Ag II	18	150 wh	-	2328.305	Co	6	-	-	2325.549	Co I	12	2	-
2331.306	Fe II	10	6	I	2328.29	U	-	2 h	-	2325.54	Zr	-	25	-
2331.303	W	15	-	-	2328.248	Ir	10	2 h	Ab	2325.516	Ru	-	2 h	-
2331.29	Rb	-	[5]	Fa	2328.222	Cb	3	-	Me	2325.511	Cb	1	5	-
2331.29	V	-	50	-	2328.20	Al II	-	[2]	Sy	2325.497	Al II	-	[15]	Sy
2331.17	Re	35	10	a	2328.19	Bi	15	-	To	2325.46	U	-	10	-
2331.16	Mo	-	7	-	2328.17	Os	3	-	a	2325.427	Al II	-	[2]	Sy
2331.136	Ba	-	3 h	-	2328.154	Ru	-	2	-	2325.35	Si	-	[5]	Sy
2331.055	Ru	-	12	-	2328.11	Mo	-	10	-	2325.321	Ir	5	-	-
2330.968	Pt I	25	10	-	2328.043	Er	2 h	-	-	2325.32	Se	-	[5]	Bl
2330.93	Mo	10	30	-	2328.026	Cb	2	3	-	2325.31	Dy	4	-	Ed
2330.91	Os	2 h	4	-	2328.00	In II	-	[18]	Ps	2325.299	Fe II	-	5	-
2330.90	W	-	3	-	2327.981	Ir	25	5 h	-	2325.26	Au	-	5 h	-
2330.79	Ta	-	60	-	2327.973	V I	8	-	-	2325.12	V	-	100	-
2330.768	Ir	3	-	-	2327.97	O II	-	[5]	Mh	2325.08	Re	20	4	a
2330.730	Zr	8	-	-	2327.954	Fe II	-	6 h	-	2325.07	Ti	-	3	-
2330.67	W	-	3	-	2327.9	K	-	[5]	Sg	2325.054	Ag II	4	25 wh	-
2330.56	Re	5	-	a	2327.90	In II	-	[10]	Ps	2325.02	Os	15	4	a
2330.50	Ir	-	30	-	2327.90	Os	25	3	a	2324.941	Ir	10	-	-
2330.46	Mo	18	2 h	-	2327.90	Ge I	3	5	-	2324.924	In I	3	1	Ps
2330.46	Re	6	-	a	2327.88	U	-	10 h	-	2324.89	Cr	-	50	-
2330.46	V	8	300	-	2327.79	Mo	-	10	-	2324.89	Hf II	40	80	Me
2330.36	Zr II	20	15	-	2327.68	Co	-	10	-	2324.89	Os	4	-	a
2330.350	Co II	10	18	-	2327.68	Rh	2	15	-	2324.86	Rh	-	25	-
2330.22	Os	-	8	-	2327.535	Co I	5	-	-	2324.85	Mo	3	25	-
2330.22	U	-	6	-	2327.532	Ru	10	-	a	2324.80	U	2	20	-
2330.20	Re	10	12	a	2327.522	Cb	-	3	-	2324.753	Zr II	20	8	-
2330.186	Cb	-	8 w	-	2327.51	Pd I	5	2 h	-	2324.748	V I	50	-	-
2330.153	Ru	5	1 h	-	2327.45	Te	-	[25]	Bl	2324.74	W II	2	7	-
2330.145	V	-	4	-	2327.394	Fe II	10	25	I	2324.705	Ir	5	80	-
2330.11	Cd II	-	[2]	Tk	2327.36	Er	-	150	a	2324.70	Th	-	15	-
2330.05	Cr	-	9	-	2327.35	Pd	-	[8]	Bx	2324.70	I	-	[12]	Bl
2330.04	Rb	-	[5]	Fa	2327.30	Hg I	-	[2]	Dj	2324.677	Ag II	15	100 wh	-
2330.04	Mo	-	15	-	2327.29	I	-	[20]	Bl	2324.67	Au	-	5	-
2330.04	Pd II	-	8 h	-	2327.28	Re	7	40	a	2324.64	Ni I	15	2	-
2329.964	Ni I	12 R	10	-	2327.256	Ir	1 h	30	Ab	2324.584	Cb	2	-	-
2329.94	Mn	2 h	-	-	2327.24	Tm	-	8	Me	2324.52	Sr II	3	-	Sd
2329.88	W	2	3	-	2327.13	Re	5	-	a	2324.51	Rh	1	8	-
2329.82	Ir	5 wh	8	-	2327.129	Cb	2	5	-	2324.50	Hf II	20	40	-
2329.79	Pd	4	-	-	2327.03	Cl	-	[6]	Bl	2324.48	Zr II	10	4	-
2329.71	Os	10	2	a	2326.946	Ir	5	-	Ab	2324.476	Fe	-	5 wh	-
2329.69	Mo	3	25	-	2326.922	Th	6	4	-	2324.407	In I	5	-	Ps
2329.68	W II	3	9	-	2326.91	Yb	2	6 h	Me	2324.406	Cb	-	3 h	-
2329.630	Fe I	5	-	-	2326.71	W	10	-	-	2324.40	A	-	[5]	Rt
2329.58	Mg II	12	-	Fl	2326.69	Mo	3	18	-	2324.37	Ce	-	12 W	-
2329.56	Os	3	10	a	2326.562	W	10	3	-	2324.352	V I	5	-	-
2329.523	V I	15	-	-	2326.498	Al II	-	[8]	Sy	2324.33	K	-	[10]	Ml
2329.46	U	-	6	-	2326.48	Co II	20	30	-	2324.32	Co II	20	50	-
2329.415	Ir	5	50	-	2326.47	Rh I	25	3 h	-	2324.24	Os	30	10	-
2329.40	Gd	-	3	Ex	2326.45	U	-	20	-	2324.237	Cb	15	10	-
2329.357	Fe	-	6	-	2326.448	Ni II	4	15	-	2324.200	Al II	-	[25]	Sy
2329.33	Er	-	6	-	2326.41	Ru	6	-	a	2324.194	W	2 h	4 wh	-
2329.29	U	2	-	-	2326.352	Fe II	-	8	-	2324.180	V I	5	-	-
2329.29	W	4	-	-	2326.331	Pt II	-	15	Sh	2324.11	Ir	-	35	-
2329.29	Os	12	6 w	-	2326.29	Rh	-	25 w	-	2324.063	Cb	2	10	-
2329.29	Tm	1	30	Me	2326.243	Ru	20	-	-	2324.03	U	-	3 h	-
2329.282	Cd	50	60	-	2326.221	Cb	5	15	Me	2323.98	Os	30	20	-
2329.24	Ta	-	3	-	2326.22	Te	-	[5]	Bl	2323.93	Ta	-	20	-
2329.12	Te	-	[50]	Bl	2326.19	Tm	-	15	Me	2323.92	Cu II	2	[1]	-
2329.095	Co I	6	10	-	2326.136	Co II	15	20	-	2323.90	Mo	-	30	-
2329.09	Hf II	2	2 h	Me	2326.11	Pd II	-	[7]	Bx	2323.89	Nd	-	10	-
2329.08	Sb	15	3 h	-	2326.101	Pt	30	8	-	2323.85	Gd	-	3	Ex
2329.016	Ru	6	12	-	2326.086	W II	10	15	-	2323.830	V	-	300	-
2328.98	Ir	3	15	-	2326.05	Mo	3	-	-	2323.74	Rb	-	[40]	Fa
2328.934	V	-	100	-	2326.050	Ir	6	50	-	2323.73	Tm	-	10 h	Me
2328.89	U	2	10	-	2326.020	V	-	12	-	2323.64	Er	3	-	-
2328.855	Co	10	-	-	2325.956	Ru	30	-	a	2323.63	Ir	-	50 l	-
2328.85	Mn	-	30	-	2325.95	O II	-	[5]	Mh	2323.578	Ba	-	2 h	-
2328.76	Ta	-	3	-	2325.92	Mn	-	12	-	2323.515	Cb	-	10	-
2328.753	La	2	2	-	2325.91	Re	5	-	a	2323.449	P II	-	[2]	Ri
2328.72	W	-	2 h	-	2325.869	V I	30	-	-	2323.44	Re	3	30	a
2328.714	Ir I	5	-	-	2325.84	Pr	-	6	-	2323.400	In II	-	[10]	Ps
2328.69	Re	25	7	a	2325.82	Ir	4	-	-	2323.39	Nd	-	8	-
2328.67	Mn	-	25	-	2325.81	Mo	15	5	-	2323.38	U	2	-	-
2328.67	B II	-	2	En	2325.81	Mn	9	-	-	2323.30	Pt	2	-	-
2328.65	Mo	-	3	-	2325.80	Co	6	3	-	2323.25	Hf II	40	60	-
2328.64	Rh I	20 l	-	-	2325.79	Ni I	30 R	9	-	2323.20	Hg I	10 h	5 h	Dj
2328.58	Pr	-	12	-	2325.77	W	3	2 h	-	2323.17	Yb	1	2	Me
2328.56	Pd II	-	10 h	Bx	2325.75	La II	2	20 hl	Me	2323.144	Co I	15 d	5	-
2328.543	Ir I	15	1 h	-	2325.71	Au II	-	5	-	2323.03	Rh	-	15 wh	-
2328.52	U	-	4	-	2325.68	Cu	2	-	-	2323.03	W II	5	12 w	-
2328.48	Tm	1	25	Me	2325.67	U	-	3	-	2323.02	B II	-	2	En
2328.40	I	-	[30 l]	Bl	2325.65	Os	6	15	-	2323.01	Cu II	-	4 h	-
2328.327	Ru	-	2	-	2325.615	Co I	50 w	-	-	2322.99	Re	6	15	a
2328.312	W II	10	12	-	2325.574	Fe II	-	5	-	2322.982	Cb	2	-	-

2322.9—2314.8 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2322.95	Mo	-	6	-	-	2320.153	V I	15	2	-	-	2317.43	Bi	8	-	-	To
2322.949	Fe	-	10 wh	-	Do	2320.09	Te	-	[10]	-	Bl	2317.39	W	2	-	-	-
2322.91	Ca	-	3	-	Ad	2320.08	Cr	10	30	-	-	2317.377	Fe II	-	-	10 h	Do
2322.851	Ru	1	6	-	-	2320.03	Ni I	30 R	5 l	-	-	2317.37	Pd	2	-	-	-
2322.79	Pd II	-	[3]	-	Bx	2319.90	N II	-	[3]	-	Fm	2317.37	A	-	-	[10]	Rt
2322.78	La	2	3 h	-	Me	2319.888	Pt II	4	25	-	-	2317.37	Ce	-	-	15	-
2322.73	Ir	-	10	-	-	2319.87	Rh	10	3	-	-	2317.27	Re	6	-	-	a
2322.72	W	-	4	-	-	2319.86	Co	-	5	-	-	2317.27	Br	-	-	[15]	Bl
2322.681	Co	3	-	-	-	2319.855	Cb	3	2	-	-	2317.248	Zr II	20	-	10	-
2322.68	Ni	12	3	-	-	2319.841	V	-	9	-	-	2317.24	Cb	-	-	12	-
2322.58	Rh	50	10	-	-	2319.771	Fe	1	1 h	-	Do	2317.228	Sn	100 R	100 R	-	-
2322.576	Pd	-	25	-	-	2319.76	W	-	4	-	-	2317.18	Zn	-	-	[3]	Bl
2322.56	Cd II	-	[5]	-	Tk	2319.756	Ni II	-	10	-	-	2317.162	Ni I	30 R	12	-	-
2322.53	Hg II	-	[2]	-	Nu	2319.73	Dy	3	-	-	-	2317.16	U	-	-	4	-
2322.51	Re	25	5	-	a	2319.70	Xe II	-	[5]	-	Hu	2317.14	Mn	5	-	-	-
2322.48	Mo	-	20	-	-	2319.68	O II	-	[15]	-	Mh	2317.14	Ta	2 h	-	-	-
2322.47	Hf II	60	60	-	Me	2319.657	Ru	3	1	-	-	2317.055	Co	-	-	20	-
2322.422	Ru	5	-	-	a	2319.598	Cb	4	10	-	-	2317.033	Ag II	15	-	100	-
2322.355	Sr II	8	5	-	ISn	2319.561	Cu I	20	-	-	IBu	2317.01	N II	-	-	[15]	Fl
2322.326	Fe II	-	5	-	Do	2319.525	Th	-	12	-	-	2316.929	Cb	2 h	-	10	-
2322.31	Ir	-	30	-	-	2319.49	Pd	2	25 w	-	-	2316.90	Ga	-	-	2 h	-
2322.28	Au	-	6	-	-	2319.441	La II	1	20	-	-	2316.862	Co I	5	-	-	-
2322.247	Co I	4	-	-	-	2319.42	Pr	-	12	-	-	2316.80	Xe II	-	-	[6]	Hu
2322.22	Te	-	[5]	-	Bl	2319.38	Cr	10	20	-	-	2316.79	O II	-	-	[7 h]	Me
2322.21	Pt	-	4	-	-	2319.313	Ir	25	8	-	-	2316.751	V I	20	-	-	Me
2322.15	O II	-	[7 h]	-	Mh	2319.27	Co	-	5	-	-	2316.735	Co I	5	-	-	-
2322.11	A	-	[5]	-	Rt	2319.25	Pd	15	-	-	-	2316.71	W	-	-	2 h	-
2322.102	V I	3	-	-	-	2319.22	Re	30	-	-	a	2316.69	Nd	-	-	3	-
2322.012	Ru	60	2	-	a	2319.207	Ru	5	6 h	-	-	2316.66	N II	-	-	[3]	Fl
2322.01	Co	-	5	-	-	2319.159	Co I	4	-	-	-	2316.59	Rh	10	-	-	a
2321.989	Cb	8	20	-	-	2319.15	K	-	[30]	-	MI	2316.54	Re	30	-	5	-
2321.96	Ni I	5 d	4	-	-	2319.10	Rh I	25	10	-	-	2316.51	Cd	-	-	[2]	Tk
2321.96	Co	3	-	-	-	2319.07	Cr	-	2	-	-	2316.49	Hf	10	-	20	Me
2321.94	Cd	-	[20]	-	Bl	2319.07	Ta	2	30 l	-	-	2316.47	Pd	12	-	-	-
2321.896	Pd II	-	25	-	-	2319.05	Al	5	8	-	Sy	2316.46	N II	-	-	[8]	Fl
2321.89	Zr	-	4	-	-	2318.999	V	-	150	-	-	2316.45	Mo	-	-	12	-
2321.86	Rh	-	80	-	-	2318.94	W	10	4	-	-	2316.41	Nd	-	-	4	-
2321.83	In	-	2	-	Sd	2318.92	Mn	-	30	-	-	2316.38	Os	10	-	1	a
2321.73	Ir	-	5	-	-	2318.83	Pr	-	10	-	-	2316.32	Kr	-	-	[10]	Me
2321.73	Re	8	12	-	a	2318.77	Ni I	10	2	-	-	2316.31	A	-	-	[100]	Rt
2321.73	Rh I	20	2	-	-	2318.76	Ga	-	3 h	-	-	2316.27	Ca	-	-	2	Ad
2321.66	Os	15 w	3 w	-	a	2318.757	Ru	10	-	-	a	2316.26	W	-	-	2 h	-
2321.634	W	12	3	-	-	2318.69	Ce	-	40	-	-	2316.20	Zr	4	-	-	-
2321.62	N II	-	[3]	-	Fm	2318.58	W	8	-	-	-	2316.17	Mo	-	-	8	-
2321.585	Ru	2	8	-	-	2318.541	Fe II	-	8	-	-	2316.162	Co	10 w	-	-	-
2321.580	Ir	12	-	-	-	2318.535	Ru	8	4	-	-	2316.12	Os	5	-	-	a
2321.567	Al	5	7	-	Gn	2318.53	Mo	12	-	-	-	2316.12	O II	-	-	[10 h]	Mh
2321.546	Ag II	-	25 w	-	-	2318.499	Ag	-	5	-	-	2316.037	Ni II	15	-	25 w	-
2321.451	Ir	10 s	8	-	-	2318.49	Hf II	8	10	-	Me	2315.98	Ti I	60 R	-	-	-
2321.43	Re	15	5	-	a	2318.48	Ni II	1	20	-	-	2315.97	Re	30	-	10	a
2321.38	Co	10	8 w	-	-	2318.47	U	-	25	-	-	2315.898	Ru	-	-	3	-
2321.38	Ni I	20 R	10	-	-	2318.432	Cb	3 wh	-	-	Me	2315.883	Sb	20	-	9	-
2321.371	Ir	2	-	-	-	2318.42	Co II	2	10	-	-	2315.88	U	-	-	10	-
2321.35	W	-	2 h	-	-	2318.36	Rh	5	5	-	-	2315.873	Pd II	2	-	25	-
2321.28	Re	10	-	-	a	2318.347	Fe II	-	4	-	-	2315.85	Au	-	-	7	-
2321.24	W	5	-	-	-	2318.33	Au	-	5 h	-	-	2315.760	Co	3	-	5	-
2321.19	Os	3	10 w	-	-	2318.320	Ir	3	-	-	Ab	2315.68	Mn	-	-	25	-
2321.15	Cd II	-	100 h	-	m	2318.294	Pt	25	9	-	-	2315.66	Rh	7	-	-	a
2321.14	Hf II	50	60	-	Me	2318.18	U	2	3	-	-	2315.65	Pd	-	-	[5]	Bx
2321.08	Rh	5	-	-	a	2318.179	Cb	-	15 wh	-	-	2315.635	V I	25	-	-	-
2321.065	V	3	-	-	-	2318.17	Pr	-	5	-	-	2315.62	Mo	3	-	15	-
2321.05	Mo	5	4	-	-	2318.17	Fe	10 w	-	-	-	2315.58	Zr I	3	-	-	-
2321.04	W	-	10	-	-	2318.136	Ir	12	-	-	-	2315.58	Os	10	-	-	a
2321.007	Gd	2	1	-	-	2318.070	V	-	250	-	-	2315.52	Kr II	-	-	[8]	Me
2320.98	Mn	2 h	-	-	-	2318.06	Pd II	3	10 h	-	-	2315.495	Pt	25	-	8	-
2320.95	Os	5	-	-	a	2318.05	Se	-	[5]	-	Bl	2315.46	Ta	6	-	35	-
2320.911	Co I	4	-	-	-	2317.98	Na	3	-	-	-	2315.45	Os	8	-	20	-
2320.83	W	-	3	-	-	2317.96	Pd II	-	[5]	-	Bx	2315.378	Ir	30	-	-	-
2320.828	Yb	20	5	-	-	2317.908	Pt	-	5	-	Sh	2315.30	Ag II	-	-	2	-
2320.80	Zr	6	-	-	-	2317.900	Ir	12	-	-	Ab	2315.28	Re	9	-	-	a
2320.74	Br	-	[2]	-	Bl	2317.89	Mo	-	15	-	-	2315.22	K	-	-	[20]	MI
2320.72	Mo	12	-	-	-	2317.89	Fe	2 h	15	-	a	2315.215	Yb	5	-	10	-
2320.701	Ru	50	-	-	-	2317.889	Fe	8	-	-	-	2315.179	Cb	5	-	5 w	-
2320.67	Hg	-	[2]	-	Dj	2317.82	La II	1	20 hl	-	-	2315.16	Os	10	-	25	-
2320.656	Cb	-	3	-	-	2317.802	Ru	-	4	-	-	2315.146	Ir	2	-	40	Ab
2320.56	Pd II	-	5 h	-	Bx	2317.783	Cb	2	3	-	-	2315.09	In I	2	-	-	Ps
2320.45	Mn	-	60	-	-	2317.77	A II	-	[2]	-	Rt	2315.020	W II	12	-	12	-
2320.43	Pr	-	6	-	-	2317.68	Rh	5 h	-	-	a	2315.00	V	-	-	2 h	-
2320.356	Fe I	25	5	-	I	2317.63	Os	3 h	-	-	a	2314.99	A	-	-	[40]	Rt
2320.246	Ag II	15	150 wh	-	-	2317.568	V	-	30	-	-	2314.98	Co II	25	-	30	-
2320.238	Cb	4	5	-	-	2317.55	W	2 h	2 h	-	-	2314.90	Ir	10	-	40	-
2320.230	Ru	20	-	-	a	2317.523	Co	5	-	-	-	2314.88	I	-	-	[12]	Bl
2320.20	I	-	[20]	-	Bl	2317.48	Al	2	3	-	Sy	2314.88	Ti	-	-	2 w	-
2320.18	Os	25	12	-	-	2317.46	Cd	-	3	-	-	2314.854	Cb	6	-	20	-
2320.18	W	-	4	-	-	2317.442	Ir	2	25	-	-	2314.848	Fe	-	-	5 wh	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis]	R			Arc	Spk., [Dis]	R			Arc	Spk., [Dis]	R
2314.84	Os	20	2	a	2312.31	Mn	12	-	-	2309.070	V	-	3	-
2314.82	Nd	-	4	-	2312.29	Pd II	-	[6]	Bx	2309.036	W	12	2 h	-
2314.777	Ru	-	3	-	2312.24	Ni II	-	10	-	2309.020	Co I	10 R	9	-
2314.74	Cr	8	50	-	2312.225	Al II	-	[2]	Sy	2308.997	Fe I	20	5	[
2314.725	P II	-	[6]	Rt	2312.22	Mo	-	7	-	2308.934	Ir	20	5	Ab
2314.697	V I	8	-	-	2312.11	Os	5	3 W	a	2308.93	Cl	-	[3]	Bl
2314.651	Co	-	4	-	2312.08	Ca	-	3	Ad	2308.90	N	-	[35]	Fl
2314.64	Au	-	15	-	2312.034	Fe II	-	15	-	2308.88	Ti I	4	-	-
2314.63	W	2	7	-	2312.03	Re	18	-	a	2308.832	V	-	2 w	-
2314.63	Cr	-	8	-	2312.0	bh C	30	-	L	2308.801	Cb	1 h	2 w	-
2314.56	Rb	-	[10]	Fa	2312.00	Kr II	-	[6]	Me	2308.765	Fe	-	15	-
2314.48	Yb	4	50	-	2312.00	Ru	-	3 h	-	2308.73	U	-	2	-
2314.46	Pd II	3	2 h	-	2311.85	W	-	3	-	2308.626	Ru	-	3	-
2314.43	Er	3	40	a	2311.81	Te	-	[5]	Bl	2308.62	Re	9	9	a
2314.42	Mo	-	20	-	2311.679	Cb	2	-	-	2308.604	Pd II	-	30	-
2314.41	Os	8	1	a	2311.66	Rh	-	9 wh	-	2308.57	I	-	[20]	Bl
2314.39	Hg	-	5 h	Dj	2311.65	W	-	3	-	2308.55	N	-	[35]	Fl
2314.356	Cb	3	-	-	2311.604	Co II	15	50	-	2308.519	Ni II	-	18	-
2314.27	Ti I	5	-	-	2311.60	N	-	[3]	Fl	2308.49	Yb	-	2 h	Me
2314.24	Kr	-	[6]	Me	2311.47	Pr	-	5	-	2308.46	Ta	2	8	-
2314.20	Ge	3	3	-	2311.47	Rh	-	15	-	2308.44	Os	12	-	a
2314.19	Pr	-	10	-	2311.469	Sb I	150 R	50	-	2308.42	Rb	-	[5]	Fa
2314.187	V	-	100	-	2311.456	V I	15	-	-	2308.35	U	-	6	-
2314.18	W	10	3	-	2311.455	Cb	2	15	-	2308.31	Os	20	6	-
2314.111	Ir	2	40	-	2311.358	Co I	10	-	-	2308.288	V I	10	-	-
2314.054	Co II	25	35	-	2311.346	V	-	150	-	2308.21	Au	-	3	-
2314.022	Ru	-	3	-	2311.288	Fe	-	35	Do	2308.21	Si	-	[2]	Sy
2314.002	Al	3	3	-	2311.224	Fe II	-	20	Do	2308.18	Mn	-	25	-
2313.985	Ta	2 h	4 h	-	2311.207	Ir	3	-	Ab	2308.171	Ni	10	-	-
2313.982	Ni I	10 R	9	-	2311.195	Ru	-	2 h	-	2308.16	Ta	-	5	-
2313.98	Lu	3	15 hl	Me	2311.18	Ta	-	15	-	2308.09	Zr	-	5	-
2313.962	Fe II	2	6	Do	2311.17	Tm	-	20	Me	2308.040	Pt I	30	18	-
2313.94	Mn	3	20	-	2311.07	Rh	8	-	-	2307.98	Mo	5	20 l	-
2313.935	V	-	3 h	-	2310.965	Ni I	50 R	10 s	-	2307.93	W II	-	5	-
2313.88	Rh	5	20	-	2310.962	Co I	12	-	-	2307.857	Co II	25	50 w	-
2313.88	Mo	-	10	-	2310.96	Mn	25	-	-	2307.79	Pr	-	10	-
2313.83	U	-	2	-	2310.958	V	2	-	Me	2307.785	Ni II	2	15	-
2313.82	Rb	-	[5]	Fa	2310.958	Pt II	15	25	-	2307.78	Cd II	-	[3]	Tk
2313.80	Bi I	2	-	To	2310.95	Au	-	3	-	2307.75	I II	-	[2 d]	Mu
2313.80	Pd	-	[4]	Bx	2310.83	Co	-	4	-	2307.66	W	2 h	5	-
2313.77	Al II	-	[3]	Sy	2310.82	W	4	6	-	2307.61	Os	5	5 l	-
2313.75	Os	15	30	-	2310.82	Nd	-	5	-	2307.50	Pd II	-	50	-
2313.74	A	-	[60]	Rt	2310.67	Yb	2	-	Me	2307.49	Co	-	6	-
2313.70	Xe II	-	[5]	Hu	2310.67	U	-	10	-	2307.44	Re	9	-	a
2313.655	Ni	10 R	7	-	2310.66	Lu	-	2 h	Me	2307.41	Yb	1	6 h	Me
2313.64	Co II	7	9	-	2310.61	N	-	[3]	Fl	2307.4	Sr I	3	[3]	Sd
2313.53	Al	-	[2]	Sy	2310.57	Pd II	-	[10]	Bx	2307.354	Ni I	10	2	-
2313.525	Cb	3	10	-	2310.533	Ir	2	15	Ab	2307.314	Fe	-	25	-
2313.49	Cd	-	[30]	Bl	2310.53	Rh	-	25	-	2307.28	Xe II	-	[3]	Hu
2313.374	Ru	6	10	-	2310.459	Zr	12	-	-	2307.27	Rb	-	[20]	Fa
2313.36	Re	20	8	a	2310.36	U	-	10	-	2307.208	Cr	10	20	-
2313.32	Cb	-	30 w	-	2310.318	Cb	2	8	-	2307.11	Gd	-	2	-
2313.300	Fe II	-	6	-	2310.25	bh C	12	-	L	2307.10	Nd	-	5	-
2313.268	In II	-	[25]	Ps	2310.25	W	-	5	-	2307.010	Co	-	7	-
2313.188	W	8	-	-	2310.21	Se	-	[10]	Bl	2306.99	Pd	-	[2]	Bx
2313.156	In II	-	[18]	Ps	2310.185	V I	10	-	-	2306.97	Mo	8	25	-
2313.102	Fe I	25	3	I	2310.16	Re	15	-	a	2306.95	Rh	-	15	-
2313.05	O II	-	[7 h]	Mh	2310.16	Os	10	6	-	2306.92	W II	4	12	-
2313.037	Pt II	3	20	-	2310.097	Fe	-	5	Do	2306.919	Ru	20	-	-
2313.03	Lu	-	5	Me	2310.04	Cr	-	6	-	2306.91	U	-	25	-
2312.98	Re	15	3	a	2310.024	Ni	8	-	-	2306.879	In I	25	30	-
2312.916	Ni II	-	18	-	2309.94	Cb	-	15 w	-	2306.87	Ta	-	6	-
2312.91	W	-	5	-	2309.85	Mo	-	35	-	2306.87	Os	12	2	a
2312.84	Cd II	1	200	-	2309.842	V	-	125	-	2306.84	Cr	2 h	10	-
2312.82	Re	15	5	a	2309.84	W	3	7	-	2306.79	Rh	2	4	-
2312.72	Zn	10	-	Hx	2309.823	Rh I	25	10	-	2306.78	Co	-	5	-
2312.71	Tm	-	10	Me	2309.81	Os	-	5	-	2306.77	Ir	-	30	-
2312.69	Mn	-	40	-	2309.75	In I	2	-	Ps	2306.75	Pd	3	2	-
2312.65	Rh	2	100	-	2309.743	U	4	2	-	2306.63	Re	15	-	a
2312.60	Ta	5	30	-	2309.73	Bi	18 wh	-	To	2306.609	Cd	20	30	-
2312.56	U	2	12	-	2309.656	Ir	10	-	-	2306.60	W	12	-	-
2312.56	Yb	1	2	Me	2309.644	Ag	150 h	200 h	-	2306.58	K	-	[10]	MI
2312.559	Ru	3	-	a	2309.61	Cu II	-	18	-	2306.56	Re	20	-	a
2312.55	Co II	3	12	-	2309.57	Ir	-	5 h	-	2306.506	Mo	-	18	-
2312.523	V I	5	-	-	2309.522	Ru	-	3	-	2306.50	Sb	35	30	-
2312.51	Ir	5	2	-	2309.52	Pd	-	6	-	2306.48	Os	5 w	-	a
2312.47	Al I	2	[2]	Sy	2309.486	Ni	12	-	-	2306.40	Ni	10	4	-
2312.45	Rb	-	[100]	Fa	2309.45	Mo	-	20	-	2306.380	Fe	10	3	-
2312.418	V I	5	-	-	2309.43	Au	-	12	-	2306.30	Os	10	2	a
2312.41	Ag II	25 wh	50 w	-	2309.40	Os	40	3	a	2306.22	He II	-	[20]	Ps
2312.38	Cu	3	2	-	2309.32	In I	3	-	Ps	2306.171	Fe I	10	-	-
2312.36	W	2 h	-	-	2309.26	Yb	-	20	Me	2306.118	In II	-	[10]	Ps
2312.34	Ni I	30 W	6	-	2309.234	Cb	10 l	30 l	-	2306.10	Co	-	4 w	-
2312.32	Rh	10	-	a	2309.16	A	-	[40]	Rt	2306.062	In II	-	[10]	Ps
2312.32	Au II	-	5	-	2309.155	Ru	5	8	-	2306.06	Mo	4	-	a

2306.0—2297.9 A.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2306.046	Os	6	30	-	-	2303.116	Cu I	30	20	IBu	-	2300.342	Ir I	3	-	-	-
2305.994	In II	-	[18]	-	Ps	2303.108	W	10	3	-	-	2300.339	Cb	4	10	-	-
2305.95	Rh	-	100 wh	-	-	2303.076	Ir	-	3 h	Ab	-	2300.29	Rh	-	10	-	-
2305.936	W	-	4	-	-	2303.02	Si I	10	6	Fl	-	2300.19	A II	-	[10]	Rt	-
2305.87	Mo	-	9	-	-	2302.997	Ni I, II	10 s	35	-	-	2300.14	Rb	-	[40]	Fa	-
2305.84	Os	3	6	-	-	2302.928	Ta	8	35 l	-	-	2300.139	Fe I	15	3	I	-
2305.76	Re	15	2 h	a	-	2302.85	V I	-	3 w	-	-	2300.088	Ni II	3	20	-	-
2305.71	Pd	-	5	-	-	2302.842	Mo	-	20	-	-	2300.078	W II	-	4	-	-
2305.67	Ti I	15	2	-	-	2302.83	O II	-	[25]	Mh	-	2300.07	A	-	[2]	Rt	-
2305.658	Mo	5	18	-	-	2302.806	Ru	-	8	-	-	2299.98	Xe II	-	[3]	Hu	-
2305.645	U	-	12	-	-	2302.728	Ti I	20	2	-	-	2299.874	Mo	-	10	-	-
2305.637	Pt	10	6	-	-	2302.7	bb C	5	-	L	-	2299.86	Si	-	[5]	Sy	-
2305.626	Ru	1	20	-	-	2302.698	Cb	8	8	-	-	2299.850	Ti I	12	2	-	-
2305.57	Re	15	-	a	-	2302.69	U	-	3	-	-	2299.82	Os	2	10	-	-
2305.518	Ru	10	20	a	-	2302.67	Kr II	-	[3]	Me	-	2299.81	Nd	-	10	-	-
2305.466	Ir I	30	5 l	-	-	2302.67	W	8	-	-	-	2299.807	W	-	10	-	-
2305.432	Cb	-	2 h	-	-	2302.62	Os	20	2	a	-	2299.78	Re	20	8 wh	a	-
2305.34	Hf II	6	8	Me	-	2302.541	Ru	80	3	-	-	2299.755	Co	4	30	-	-
2305.33	Yb	8	100	Me	-	2302.49	In I	2	-	Ps	-	2299.67	Ir	-	10	a	-
2305.25	Mo	-	8	-	-	2302.472	Ni II	2	20	-	-	2299.646	Ni II	3	15	-	-
2305.244	Ni II	2	20	-	-	2302.42	Pt	-	20 w	-	-	2299.598	Pd II	-	15	-	-
2305.223	W	-	3	-	-	2302.409	Ir I	15	-	-	-	2299.543	V I	2	-	-	-
2305.18	Co I	15	2	-	-	2302.319	Pd II	-	15	-	-	2299.526	Ir	25	3	-	-
2305.10	Pr	-	10	-	-	2302.31	W	2	3	-	-	2299.515	Pt II	-	3 wh	Sh	-
2305.06	Rh	2	10	a	-	2302.256	V	2 h	3	-	-	2299.455	Fe I	8	-	-	-
2305.053	W	7	5	-	-	2302.235	Ta	6	30	-	-	2299.44	Cu II	-	15	-	-
2304.997	Mn	40	60	-	-	2302.233	Ru	-	-	a	-	2299.432	Pd II	-	25	-	-
2304.968	Bi	2 h	-	-	-	2302.14	Pd	-	[3]	Bx	-	2299.42	Co II	-	25	Me	-
2304.95	Al	5	-	-	-	2302.130	Mo	-	8	-	-	2299.36	Xe II	-	[2]	Hu	-
2304.86	Pd II	3	3	-	-	2302.12	C	-	15 w	-	-	2299.337	V	2	-	-	-
2304.83	Os	-	10	-	-	2302.11	Hf II	5	6	Me	-	2299.29	Ru	50	-	a	-
2304.827	Ru	12	6	-	-	2302.09	Hg I	15 h	15	Cn	-	2299.27	Mo	-	5	-	-
2304.81	Au II	-	30	-	-	2302.085	Cb	15	30	-	-	2299.221	Cb	-	5	-	-
2304.8	Rb	-	[5]	Dr	-	2302.012	Pd II	-	60	-	-	2299.218	Fe I	15	4	I	-
2304.785	V	-	2 w	Me	-	2301.944	Rh	-	25	-	-	2299.168	U	-	2	-	-
2304.77	Cb	-	20 w	-	-	2301.89	U	-	2	-	-	2299.12	Os	15	-	a	-
2304.729	Fe I	10	20	-	-	2301.88	Os	25	4	a	-	2299.02	W	4	3	a	-
2304.722	Ru	4	3	-	-	2301.88	W	-	3	-	-	2298.95	Ti	30	150	Sd	-
2304.69	Os	10	-	a	-	2301.868	Mn	-	4 wh	-	-	2298.95	Mn	20 s	40	-	-
2304.57	Cl	-	[3]	Bl	-	2301.823	Re	-	40	-	-	2298.93	Ta	-	18	-	-
2304.5	A	-	[2]	Rt	-	2301.73	Kr II	-	[6]	Me	-	2298.86	Rb	-	[20]	Fa	-
2304.50	Hf	3	3 h	Me	-	2301.681	Fe I	15	-	I	-	2298.86	Mo	-	2	-	-
2304.46	Cd	-	[3]	Bl	-	2301.675	Ir	-	25 wh	-	-	2298.84	Cu	3 w	-	a	-
2304.45	Re	6	-	a	-	2301.65	W	8	10	-	-	2298.781	Pt	15	4	-	-
2304.403	U	-	4	-	-	2301.62	Pr	-	2 h	-	-	2298.78	Hf II	6	8	Me	-
2304.38	Os	40	-	a	-	2301.61	Zr	-	3 h	Ks	-	2298.74	W	8	-	-	-
2304.362	Cb	-	4 wh	-	-	2301.57	Ni	10	-	-	-	2298.738	Co II	-	12	-	-
2304.35	Pd	-	[7]	Bx	-	2301.51	U	-	2	-	-	2298.697	In I	2	-	Ps	-
2304.349	V	3	-	Me	-	2301.466	Ta	2	35	-	-	2298.662	Fe	8	2	-	-
2304.29	Te	-	[10 h]	Bl	-	2301.424	Fe II	-	4	-	-	2298.66	Yb	1	4	-	-
2304.27	Rb	-	[20]	Fa	-	2301.40	Co II	10	25	-	-	2298.659	Ru	4	8	-	-
2304.26	Pt	-	9	-	-	2301.34	Re	10	-	a	-	2298.656	W	-	8	-	-
2304.251	Mo	7	50	-	-	2301.29	W II	-	4	-	-	2298.655	Cb	-	2 h	-	-
2304.235	Ba II	60 R	80 R	-	-	2301.22	Th	-	30	-	-	2298.61	Re	-	7	a	-
2304.215	Ir I	100	-	-	-	2301.18	Cd	-	[3]	Bl	-	2298.499	Ni II	-	10	-	-
2304.185	Co I	10	6	-	-	2301.173	Fe	10	-	-	-	2298.47	Os	12	2	a	-
2304.14	Rb	-	[125]	Fa	-	2301.16	Nd	-	5	-	-	2298.380	Cb	2 h	4	-	-
2304.0	K	-	[2]	MI	-	2301.16	Mo	-	3	-	-	2298.379	Mo	3	10	-	-
2304.0	A	-	[2]	Rt	-	2301.14	Os	15	3	a	-	2298.375	Co I	15	2	-	-
2303.974	Co I	12	2	-	-	2301.03	Au II	-	3	-	-	2298.370	U	-	6	-	-
2303.93	U	-	8	-	-	2301.019	Ni II	-	3	-	-	2298.361	Pt	12	3	-	-
2303.857	Ni II	-	15	-	-	2301.0	Rb	-	[2]	Dr	-	2298.36	Re	9	-	a	-
2303.833	Fe	-	2	-	-	2300.914	Rh	2	30	-	-	2298.34	Hf II	25	50	Me	-
2303.826	W II	10	15	-	-	2300.908	Ir	8	10	-	-	2298.340	W	3	-	-	-
2303.82	Pr	-	9	-	-	2300.9	K	-	[10]	MI	-	2298.33	In I	2	-	Ps	-
2303.71	Re	10	2 h	a	-	2300.89	U	-	4 h	-	-	2298.325	P II	-	[6]	Ri	-
2303.69	Os	12	3	a	-	2300.87	Cu	8	-	-	-	2298.28	W	10	12	-	-
2303.65	U	-	3	-	-	2300.86	Os	-	20	-	-	2298.275	Ni II	12	15	-	-
2303.582	Ir	8	-	-	-	2300.784	Cb	10	15	-	-	2298.258	Rh	-	150	-	-
2303.578	Fe I	10	3	I	-	2300.78	Co	5	15	-	-	2298.252	Ir	3	30	Ab	-
2303.51	Os	10	4	a	-	2300.778	Ni I	20 r	4	-	-	2298.231	Fe II	5	25	-	-
2303.510	Co I	9	-	-	-	2300.75	U	-	6	-	-	2298.22	Mo	-	12	-	-
2303.491	Ta	6	18	-	-	2300.68	Ce	-	10 W	-	-	2298.17	Fe I	5	-	-	-
2303.47	Pd	4	-	-	-	2300.64	Ir	-	5	-	-	2298.17	A	-	[40]	Rt	-
2303.468	Rh	-	20	-	-	2300.59	Fe	8	-	-	-	2298.16	Ti II	-	20	MI	-
2303.422	Fe	10	-	I	-	2300.576	W	-	5	-	-	2298.160	Zr	10	-	-	-
2303.389	Ir I	20	1	-	-	2300.52	Cr	-	15	-	-	2298.159	Ir I	12	-	-	-
2303.351	Fe II	-	15	-	-	2300.515	Cb	-	2	-	-	2298.15	Os	5	5	-	-
2303.30	Yb	-	2 d	Me	-	2300.499	Ir I	30	25	-	-	2298.135	Pt	-	12	-	-
2303.278	W	4	12	-	-	2300.48	Co	-	2	-	-	2298.12	Re	7	30	a	-
2303.242	V	-	6	-	-	2300.41	Zr	1 h	2 h	-	-	2298.10	Ta	-	15	-	-
2303.21	Hf II	4	4 h	Me	-	2300.39	Pt	-	2	-	-	2298.08	Ti II	-	40	MI	-
2303.200	Pt I	25	8	-	-	2300.38	Kr II	-	[6]	Me	-	2298.06	Au II	-	3	-	-
2303.153	Cb	2	2	-	-	2300.367	Ru	50	-	a	-	2298.048	Ir I	10	-	-	-
2303.141	Zr	100	-	-	-	2300.36	O II	-	[70]	Mh	-	2297.974	Ru	2	3	-	-

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2297.94	W	-	8	-	-	2294.85	W	5	10	-	-	2292.2	Rb	-	-	[2]	Dr
2297.88	Yb	2	4	-	Me	2294.706	Cb	-	2 wh	-	-	2292.13	Ta	4	8	-	-
2297.88	Tl II	-	35	-	MI	2294.686	Pr	-	10	-	-	2292.07	Se	-	-	[10]	Bl
2297.869	Ga	2	3	-	Uh	2294.656	Rh	-	30	-	-	2292.02	Cd	-	-	[4]	Tk
2297.856	Cb	-	5 w	-	-	2294.612	Fe II	15	5	-	-	2291.93	Os	4	-	-	a
2297.850	V	-	100	-	-	2294.58	Cl	-	-	[3]	Jv	2291.92	Hg	-	-	5 h	Dj
2297.786	Fe I	35 R	6	-	I	2294.57	Xe II	-	-	[8]	Hu	2291.86	Ti II	-	-	3	-
2297.78	La	2 h	150	-	-	2294.565	Pt II	-	2	-	-	2291.78	Ir	-	-	5	-
2297.77	Pr	-	100	-	-	2294.544	W II	20	20	-	-	2291.77	Rh	5	-	-	a
2297.718	U	-	2	-	-	2294.49	Rh	10	-	-	-	2291.76	Rb	-	-	[80]	Fa
2297.64	Mo	-	7	-	-	2294.406	Fe I	15	2	I	-	2291.72	Pt	-	-	20 w	-
2297.615	Cb	3	5	-	-	2294.364	Cu II	3	25	18u	-	2291.67	N II	-	-	[8]	Fl
2297.58	Bi	2 h	-	-	To	2294.30	Rh	3	5	a	-	2291.655	Ir	10	-	-	-
2297.559	Ir	5	-	-	-	2294.28	Cd	-	-	[2]	Tk	2291.65	Th	-	-	10	-
2297.491	Ni II	10	15	-	-	2294.217	Ti I	6	-	-	-	2291.645	Cb	-	-	5	-
2297.41	Lu	15	100	-	Me	2294.202	Ga	2	3	Uh	-	2291.642	U	-	-	8	-
2297.38	W	4	3	-	-	2294.140	Pt II	-	3 wh	Sh	-	2291.64	Hf II	30	40	-	-
2297.36	Co	-	8	-	-	2294.119	Rh	1	50	-	-	2291.63	Yb	-	-	3 h	Me
2297.31	Pt	-	8 w	-	-	2294.11	Re	8	-	a	-	2291.624	Fe I	10	2	-	-
2297.188	Cr	10	50	-	-	2294.06	Ru	30	1	a	-	2291.533	V I	5	-	-	-
2297.138	Ir	2	20	-	-	2294.045	Zr II	50	10	-	-	2291.52	Au II	-	-	15	-
2297.138	Ni II	15	18	-	-	2294.03	Tm	5	2	Me	-	2291.455	Co I	12	5 w	-	-
2297.09	In	-	10	-	Sq	2294.01	Pd II	-	10 h	-	-	2291.44	Pd	-	-	18	-
2297.02	U	-	4	-	-	2294.006	Co I	10	-	-	-	2291.384	Cb	2	2	-	-
2296.97	W II	3	6	-	-	2293.98	Au	-	2 h	-	-	2291.368	W	-	-	4	-
2296.925	Fe I	15	2	-	I	2293.922	Cb	2	15	-	-	2291.33	Re	20	5	a	-
2296.86	Ta	-	25	-	-	2293.87	Pt	2	-	-	-	2291.177	Ru I	60	1	-	-
2296.85	Pb	-	3	-	-	2293.850	Bi	2 h	-	-	-	2291.120	Fe I	15	-	I	-
2296.79	K II	-	[5]	-	Bn	2293.846	Fe	10	6	I	-	2291.113	Zr II	80	15	-	-
2296.710	Co I	18	2	-	-	2293.842	Cu I	40 wh	10	18u	-	2291.03	Si I	8	-	-	Ks
2296.666	Fe II	5	-	-	-	2293.78	Lu	-	2	Me	-	2290.998	Cu II	-	-	25	Sh
2296.650	Ru	-	5	-	-	2293.765	Fe II	-	10	Do	-	2290.99	Ag	-	-	3	-
2296.553	Ni II	10	20	-	-	2293.758	Ti I	6	-	-	-	2290.946	W	5	-	-	-
2296.549	Mo	-	25	-	-	2293.70	Pd II	-	10	-	-	2290.88	O II	-	-	[25]	Mh
2296.52	Xe	-	[15]	-	Hu	2293.68	I	-	[20]	Bl	-	2290.87	Mo	3	18	-	-
2296.513	Pd II	20	60	-	-	2293.64	Re	9	10	a	-	2290.86	Cd II	-	-	[4]	Tk
2296.51	Au	-	3	-	-	2293.621	U	-	10	-	-	2290.84	Xe II	-	-	[3]	Hu
2296.313	V	-	9	-	-	2293.59	Pd II	-	25 h	-	-	2290.81	Re	10	6	a	-
2296.25	U	-	2	-	-	2293.54	Os	20	25	-	-	2290.80	Ir	3	50	-	-
2296.24	Re	15	2 h	a	-	2293.467	Pt II	-	7	-	-	2290.768	Fe I	6	-	-	-
2296.23	Hg II	-	10	-	Nu	2293.46	Sb	25	10	-	-	2290.68	Cr	-	-	12	-
2296.21	Tm	2	30	-	Me	2293.41	Br	-	[2]	Bl	-	2290.67	U	2	2	-	-
2296.209	Ir I	25	-	-	-	2293.40	N II	-	[8]	Fl	-	2290.560	W II	2	9	-	-
2296.17	Fe	2	5 wh	-	-	2293.39	Co II	10	15	-	-	2290.55	Tm	-	-	5	Me
2296.170	Ru	-	5	-	-	2293.381	W	-	6	-	-	2290.545	Fe I	15	-	-	-
2296.13	Hf II	5	6 h	-	Me	2293.357	Pd II	-	25	-	-	2290.544	V	-	-	50 wh	-
2296.108	Fe	-	2	-	Do	2293.33	O II	-	[50]	Mh	-	2290.544	Co I	10	-	-	-
2296.051	Co I	18	2	-	-	2293.29	Rh	10	-	-	-	2290.450	Ir	3	-	-	-
2296.043	Ag II	-	20 Wh	-	-	2293.279	Ir I	8	-	-	-	2290.38	Cb	-	-	25 w	-
2296.00	Sb	-	3 h	-	-	2293.271	Cb	2	-	-	-	2290.36	Rh	8	-	-	a
2295.000	Ir I	15	3	-	-	2293.27	A	-	[20]	Rt	-	2290.33	Co	-	-	5	-
2295.99	W	3	9	-	-	2293.26	Os	10	-	-	-	2290.32	Mo	-	-	18	-
2295.979	Cb	2	2	-	-	2293.243	V I	2	-	Me	-	2290.31	N II	-	-	[3]	Fl
2295.92	Co	-	8	-	-	2293.24	I	-	[12]	Bl	-	2290.29	Mo	8	-	-	a
2295.866	U	-	3	-	-	2293.146	Cb	-	2	-	-	2290.263	V I	2 h	2	-	Me
2295.864	Pt II	-	15	-	Sh	2293.134	Fe II	-	2	-	-	2290.26	Pr	-	-	8	-
2295.83	Cd	-	[2]	-	Bl	2293.116	Ni I	10	3	-	-	2290.13	Os	10	-	-	a
2295.787	W	4	8	-	-	2293.05	Ru	10	-	a	-	2290.065	Fe I	10	-	-	-
2295.77	Pd	-	10	-	-	2293.02	Ir	3 w	-	a	-	2290.06	Mo	-	-	18	-
2295.738	Pt	20	2	-	-	2292.99	Co II	10	30	-	-	2290.03	Rh	25	500	-	-
2295.676	Cb	15	30	-	-	2292.983	Mo	-	3	-	-	2290.01	Ta	3	-	-	-
2295.57	Cr	-	10	-	-	2292.98	Pd	2	-	-	-	2289.98	W	-	-	3	-
2295.56	Ir	-	4	-	-	2292.97	Ti II	-	[20]	El	-	2289.98	Bi	2	-	-	To
2295.56	Os	-	8	-	-	2292.855	V	-	250	-	-	2289.976	Ni I	20 r	20	-	-
2295.51	Pd II	-	[12]	-	Bx	2292.81	Yb	1	3	Me	-	2289.97	Mn	-	-	3	-
2295.507	W	-	3	-	-	2292.8	In	-	2	Cx	-	2289.89	Mo	5	15	-	-
2295.504	V	15	15	-	Me	2292.77	Hf II	3	3 h	Me	-	2289.837	Cb	2	-	-	-
2295.480	Zr II	40	8	-	-	2292.770	Fe II	-	4	Do	-	2289.78	A	-	-	[20]	Rt
2295.46	Nd	-	5	-	-	2292.72	N II	-	[3]	Fl	-	2289.61	Si I	10	-	-	Ks
2295.416	V I	2	2	-	-	2292.69	Nd	-	8	-	-	2289.58	Rh	-	-	15	-
2295.32	Cd II	-	[3]	-	Tk	2292.681	Cu II	-	5	18u	-	2289.502	Co	9	-	-	-
2295.308	Mo	-	8	-	-	2292.64	I	-	[12]	Bl	-	2289.41	Ca	-	-	3	Ad
2295.305	U	2	-	-	-	2292.589	V	-	25	-	-	2289.393	Ir	5	40	-	-
2295.230	Co I	15	3	-	-	2292.544	Ta	-	20	-	-	2289.39	W	2 h	4	-	-
2295.18	Ta	5	12 l	-	-	2292.523	Fe I	15	2	I	-	2289.32	U	-	-	2	-
2295.15	Au	-	3	-	-	2292.44	I	-	[40]	Bl	-	2289.27	Pt I	25	12	-	-
2295.119	Rh	5	50	-	-	2292.40	Xe II	-	[10]	Hu	-	2289.26	Cr	-	-	8	-
2295.084	Ir I	40	5	-	-	2292.395	Pt I	400	100	-	-	2289.219	V	-	-	30	-
2295.06	Re	-	10	-	a	2292.393	W	-	3	-	-	2289.16	Ta	8	25	-	-
2295.040	Fe	2	-	-	-	2292.34	Hf	2	2 h	Me	-	2289.12	Mo	4	20	-	-
2294.992	V	5	100	-	Me	2292.337	Ru	20	-	-	-	2289.06	Co	-	-	2	-
2294.99	Rb	-	[5]	-	Fa	2292.324	Cb	-	2	-	-	2289.031	Fe I	25	-	-	-
2294.982	Cb	2	8	-	-	2292.32	La II	-	3	Me	-	2288.986	Sb	20	10	-	-
2294.960	Mo	-	50	-	-	2292.27	Yb	-	3 h	Me	-	2288.93	Yb	1	6	-	Me
2294.85	U	-	3	-	-	2292.21	Os	15	5 w	-	-	2288.920	Ir	2	-	-	-

2288.9—2280.3 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
2288.90	Te	-	[5]	Bl	2286.113	Va II	-	2 w	Sz	2283.17	Os	-	30	-
2288.866	Cb	2	5	-	2285.95	Tl	-	2	Ed	2283.15	Xe	-	[4]	Dj
2288.786	Co I	15	-	-	2285.94	Xe II	-	[4]	Hu	2283.09	Pd	-	[3]	Bx
2288.74	Cd	-	20	-	2285.90	W	4	-	-	2283.082	Fe I	8	-	-
2288.72	I II	-	[2]	Mu	2285.86	Nd	-	3	-	2283.07	Kr	-	[30]	Me
2288.68	W	6	4	-	2285.81	Co	-	2	-	2283.04	Os	10	-	a
2288.678	Fe	-	3	Do	2285.80	Yb	3	8 h	Me	2283.005	Cb	10	25 l	-
2288.63	Au	-	3	-	2285.74	Ir	-	10 w	-	2282.99	Yb	5	50	-
2288.63	Hf II	5	6	Me	2285.73	W	-	3	-	2282.977	Pd II	-	15 d	-
2288.628	V	-	80	-	2285.69	Al II	-	[2]	Sy	2282.90	Au	-	6	-
2288.614	Zr II	2	2	-	2285.68	O	-	[7]	Mh	2282.89	Mo	-	20	-
2288.59	Pd	-	4	-	2285.673	Cb	-	2 w	Me	2282.88	Rh	-	7	-
2288.58	U	2	2	-	2285.66	U	-	10	-	2282.863	Fe I	8	-	-
2288.57	Rh	25	10	-	2285.65	Pt	-	8 w	-	2282.857	V	-	4	-
2288.56	Co	-	2	-	2285.52	Al II	-	[8]	Sy	2282.83	Os	25	5	a
2288.524	W	-	7	-	2285.465	Ir I	8	-	-	2282.78	U	-	25	-
2288.47	N II	-	[15]	Fl	2285.455	V	-	100	-	2282.73	Nd	-	8	-
2288.42	Mn	6	3	a	2285.43	Hf II	6	6 h	Me	2282.64	A II	-	[20]	Rt
2288.4	A	-	[2]	Rt	2285.412	Co I	12	-	-	2282.62	Ag	-	4	-
2288.39	Ni I	12	2	-	2285.380	Ru	80	1	-	2282.52	Cd II	-	[3]	Tk
2288.30	U	-	2	-	2285.31	Re	25	7	a	2282.50	W	6	4	-
2288.25	Rh	-	40	-	2285.3	N II	-	[15]	Fl	2282.496	Ir	8	-	-
2288.25	Au II	-	2 h	Ex	2285.25	Ta	6	18	-	2282.45	Pd II	-	15 h	-
2288.192	Pt II	15	30	-	2285.24	Xe	-	[3]	Hu	2282.366	Co	-	5	-
2288.16	Cl	-	[4]	Bl	2285.228	Zr	100	-	-	2282.27	Ag	-	3	-
2288.15	Pr	-	7	-	2285.221	Cb	8	15	-	2282.26	Os	100	125	-
2288.139	Sb	5	-	-	2285.19	Ga	-	3	Kl	2282.236	Sn	10	15	m
2288.12	As I	250 R	5	Me	2285.17	W	10	3	-	2282.21	Mo	-	5	-
2288.095	V	3 h	15	-	2285.17	Al II	-	[15]	Sy	2282.21	Re	-	4	a
2288.09	Ir	-	5 w	-	2285.14	U	-	2	-	2282.20	W II	4	12	-
2288.018	Cd I	1500 R	300 R	Hx	2285.14	Mo	-	18	-	2282.19	Ta	6	15	-
2287.927	V	-	15	-	2285.114	P II	-	[20]	Rt	2282.171	Ir I	3	-	Ab
2287.89	I	-	[12]	Bl	2285.08	Nd	-	3	-	2282.100	Pd II	-	35	-
2287.878	Ir	20	5	-	2285.02	Ta	3	12	-	2282.05	A	-	[40]	Rt
2287.85	Ce	-	10	-	2285.011	Rh	-	30	-	2281.999	Sr II	8	5	ISn
2287.84	Ta	5	-	a	2284.984	V I	2 h	4	-	2281.99	Fe	6 w	-	-
2287.84	Te	-	[5]	Bl	2284.92	Os	20	-	-	2281.907	Ir I	25	3	-
2287.809	Co	12 d	4	-	2284.91	A	-	[5]	Rt	2281.88	Co	3	25	-
2287.8	A	-	[60]	Rt	2284.90	W	3	-	-	2281.84	U	-	3 h	-
2287.80	U	-	2	-	2284.90	I II	-	[4]	Bl	2281.825	Cb	2	10	-
2287.79	Kr II	-	[30]	Me	2284.90	Os	20	5	a	2281.81	Hf	5	6 h	Me
2287.68	Ru	60	1	a	2284.89	O II	-	[10]	Mh	2281.710	Ru	12	15	-
2287.67	W	10	-	-	2284.846	Co I	30	-	-	2281.67	W	-	4	-
2287.65	Ni II	2	20	-	2284.83	U	-	4	-	2281.66	Re	30	7	a
2287.630	Fe I	5	-	I	2284.80	Tm	20	10	Me	2281.642	In II	-	[20]	Ps
2287.55	Pd	-	[10]	Bx	2284.76	Os	12	-	a	2281.609	V	2	30	-
2287.525	Ru	3	-	-	2284.748	V	-	3	Me	2281.609	Ru	4	15	-
2287.499	Pt II	-	25 w	Sh	2284.68	Cr	18	-	a	2281.56	Th	-	8	-
2287.492	P II	-	[18]	Rt	2284.67	Cd	-	[2]	Bl	2281.52	Ta	2	15	-
2287.47	W	-	3	-	2284.64	Pr	-	10	-	2281.506	Cb	-	25	-
2287.323	Ni I	5	-	-	2284.62	W	-	8	-	2281.47	Zr	-	2 h	-
2287.25	Cr	-	2 h	-	2284.605	Ir	20	5 h	-	2281.44	Mo	-	3	-
2287.248	Fe I	20	6	I	2284.60	Hf II	20	30	Me	2281.37	Pd II	-	[4 d]	Bx
2287.19	A	-	[20]	Rt	2284.53	Cr	2 h	10	-	2281.37	Mn	-	15	a
2287.19	W	-	3	-	2284.497	V I	8	2 h	-	2281.345	Bi	10	-	Om
2287.084	Ni II	100	500	-	2284.44	W	4	5	-	2281.34	Co	5	-	-
2287.06	Si	-	[10]	Sy	2284.43	Mo	6	30	-	2281.31	Ta	2	12	-
2286.97	Rb	-	[5 d]	Fa	2284.381	Co I	8	-	-	2281.31	Re	10	-	a
2286.888	Cb	2	3 h	-	2284.348	Cb	-	15 w	-	2281.27	Pt	4	20 w	-
2286.80	Ni	2 h	-	-	2284.32	K	-	[5]	MI	2281.237	V	-	30	-
2286.78	Pd II	-	[8]	Bx	2284.085	Fe I	25	20	I	2281.2	A	-	[20]	Rt
2286.77	U	2	-	-	2284.08	Rh	-	200	-	2281.131	Cb	2	8	-
2286.750	Cb	-	4	-	2284.02	A	-	[10]	Rt	2281.04	W	4	5	-
2286.733	Cu II	-	25	-	2283.99	W	-	5	-	2281.021	Ir	2	50	-
2286.73	N II	-	[25]	Fl	2283.98	Yb	-	8 h	Me	2281.003	P II	-	[20]	Rt
2286.71	Te	-	[30]	Bl	2283.766	V	-	7	-	2280.958	Co II	4	5	-
2286.7	bh C	30	-	L	2283.75	In I	2	-	Ps	2280.94	La II	2	4 h	Me
2286.680	Sn	60	40	-	2283.72	U	-	15	-	2280.93	Os	10	-	a
2286.62	Re	4	25	a	2283.70	N II	-	[8]	Fl	2280.85	Pb II	-	2 h	-
2286.61	Pr	-	6	-	2283.67	Os	50	15	-	2280.83	W	4	4	-
2286.59	Ta	-	6	-	2283.653	Fe I	10	-	I	2280.827	Pd II	15	35	-
2286.586	V I	4	-	-	2283.519	Co II	10	15	-	2280.82	Mo	-	30 l	-
2286.572	Pt II	-	10 w	Sh	2283.42	O II	-	[7]	Mh	2280.757	Ba	-	2 w	Sz
2286.517	Os	30	10	-	2283.41	Er	3	5	a	2280.632	W	6	6	-
2286.50	W	-	3	-	2283.38	Yb	8	10	Me	2280.6	A	-	[60]	Rt
2286.46	Ag	-	12	-	2283.38	W	-	3	-	2280.574	Ir	30	20 wh	Ab
2286.428	Fe	2	-	-	2283.377	Cb	2	-	Me	2280.51	Ta	3	10	-
2286.42	Mo	2 h	9	-	2283.376	V I	5	5 w	-	2280.5	Rn	-	[3]	Pe
2286.352	Cb	-	4 w	-	2283.34	U	-	10 h	-	2280.48	Pt	20	9	-
2286.29	W	2	5	-	2283.32	Au II	-	15	-	2280.46	Co	-	6 w	-
2286.221	Ir	12	-	-	2283.305	Fe I	8	-	-	2280.445	Cb	5	8	-
2286.190	Pt II	-	3 w	Sh	2283.28	Mo	-	10	-	2280.44	Th	5	2	-
2286.18	Ti II	2	6	-	2283.27	W	10	5	-	2280.43	Pd	-	[25]	Bx
2286.156	Co II	40	300 l	-	2283.19	Ta	2	15 l	-	2280.346	Zr II	2	4	-
2286.152	Fe	-	2	-	2283.17	Zr	-	2	-	2280.336	V	-	25	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities					
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
2280.32	W	—	8	—	—	2276.43	Os	30	5	—	—	2273.15	Hf II	40	60	—	Me
2280.220	Fe I	15	—	—	—	2312.57	Cd	25	—	Hz	—	2273.120	Cb	—	3	—	Me
2280.15	Co	2	—	—	—	2276.42	Cr	—	15	—	—	2273.092	Ir	5	4	—	Ab
2280.14	U	—	4	—	—	2276.417	Ru	3	3	—	—	2273.020	V	—	10	—	—
2280.05	K	—	[10]	—	MI	2276.41	Pt	25	12	—	—	2273.00	W	10	5	—	—
2279.999	Ir	20	4	—	—	2276.28	U	—	3	—	—	2272.91	Co	—	2 h	—	—
2279.982	Ag II	10	125 h	—	—	2276.253	Cu II	10	30	IBu	—	2272.816	Fe I	20	—	—	—
2279.97	U	2	2	—	—	2276.214	Cb	2	—	—	—	2272.723	Cb	5 r	10	—	—
2279.97	W	—	4	—	—	2276.21	Rh	—	50	—	—	2272.680	U	8	2 h	—	—
2279.96	Ti I	5 w	2	—	—	2276.21	Mo	—	20	—	—	2272.672	Mo	—	5	—	—
2279.924	Fe I	15	40	I	—	2276.170	Cb	2	3	—	—	2272.66	Re	3	20	a	—
2279.85	Os	20	6	a	—	2276.132	Ru	4	1	—	—	2272.61	Fe	3	—	—	—
2279.763	V	—	10	—	—	2276.07	Yb	2	—	Me	—	2272.606	Ti I	9	2	—	—
2279.622	Ir	3 wh	2 wh	—	—	2276.05	U	—	20	—	—	2272.6	A	—	[2]	Rt	—
2279.60	Re	3	12	a	—	2276.024	Fe I	20	10	I	—	2272.593	Ta	12	30	—	—
2279.58	Mo	4	10	—	—	2276.020	Pd	—	30 h	—	—	2272.538	Os	4 w	50	—	—
2279.569	Ru	100	10	—	—	2275.94	W	—	3	—	—	2272.51	Ir	—	30	—	—
2279.53	Ni	20	—	—	—	2275.876	Co I	9	—	—	—	2272.51	W	—	6	—	—
2279.490	Co I	15	—	—	—	2275.871	V	—	2	—	—	2272.41	Se	—	[10]	Bl	—
2279.41	Au	—	3 h	—	—	2275.689	Ni II	2	15	—	—	2272.38	Cd II	—	[2]	Tk	—
2279.388	Cb	—	20 w	—	—	2275.66	Ir	—	25	—	—	2272.37	Ti	2	—	—	—
2279.377	V	—	10	—	—	2275.64	Mo	—	15	—	—	2272.37	Mo	—	8	—	—
2279.27	Se	—	[10]	Bl	—	2275.63	W	6	3	—	—	2272.32	U	—	2	—	—
2279.20	W	—	3	—	—	2275.60	Ta	2	25	—	—	2272.252	bh C	4	8	—	—
2279.152	V I	3	—	Me	—	2275.595	Fe I	8	—	—	—	2272.2	Co II	20	—	—	L
2279.11	Os	100	25	a	—	2275.50	W	—	5	—	—	2272.12	W	3	—	—	—
2279.04	Mo	—	7	—	—	2275.48	Cr	—	8	—	—	2272.089	Ru	100	3	—	—
2279.02	Co	—	3	—	—	2275.48	Sr I	2	[3]	FI	—	2272.067	Fe I	15	3	—	I
2278.973	V	—	25	—	—	2275.471	Ca I	40	5	IWg	—	2272.048	V I	3	—	—	—
2278.91	W	—	5	—	—	2275.47	Mo	—	15	—	—	2271.97	Lu	—	2	—	Me
2278.773	Ni II	12	25	—	—	2275.41	Co	—	7	—	—	2271.97	Te	—	[25]	Bl	—
2278.763	Pt II	—	15	—	—	2275.39	Zr II	—	2 h	Ks	—	2271.950	Ni I	10	3	—	—
2278.76	Re	20	7	a	—	2275.30	Er	7	2	a	—	2271.85	Ta	12	30	—	—
2278.70	W	—	5	—	—	2275.26	Ag II	—	50 wh	—	—	2271.846	V	—	2	—	—
2278.63	U	—	3	—	—	2275.25	Re	300 r	300 r	a	—	2271.812	U	—	4	—	—
2278.57	Re	15	—	a	—	2275.229	V	—	15	—	—	2271.783	Mo	—	5 h	—	—
2278.49	Ir	—	25	—	—	2275.219	Cb	—	20	—	—	2271.780	Fe I	35	—	—	I
2278.46	Co	—	8	—	—	2275.187	Fe	10	—	—	—	2271.718	Pt II	—	20 w	Sh	—
2278.441	Cu II	—	20	—	—	2275.12	U	—	2	—	—	2271.64	Re	10	4	a	Bl
2278.44	Os	25	—	a	—	2275.00	Mo	3	35	—	—	2271.63	Cd	—	[2]	—	—
2278.3	In I	15	—	Uh	—	2274.989	Ru	6	5	—	—	2271.39	Ir	—	40	—	—
2278.30	Si I	7	—	Ks	—	2274.97	Xe	—	[2 h]	Dj	—	2271.37	Xe	—	[3]	Dj	—
2278.298	Co I	9	—	—	—	2274.870	Cu II	—	3 h	IBu	—	2271.36	As I	25	1	—	Me
2278.196	In I	5	—	Ps	—	2274.84	Pt	25	10	—	—	2271.33	Re	25	6	a	—
2278.19	Ru	80	—	a	—	2274.811	Pd II	—	9 w	—	—	2271.21	Co	—	5 w	—	—
2278.11	W	8	8	—	—	2274.80	Zn	—	[3]	Bl	—	2271.185	V	—	3	—	—
2278.093	V	—	2 w	—	—	2274.763	Cb	3	—	—	—	2271.14	Hf II	2	2 h	Me	—
2278.05	Mn	—	20	a	—	2274.73	Ni II	—	15	—	—	2271.13	Yb	8	—	—	—
2277.98	U	—	2	—	—	2274.68	U	—	2	—	—	2271.117	W II	3	7	—	—
2277.96	W	2 h	8	—	—	2274.66	Ni I	12	—	—	—	2271.03	Ta	—	4	—	—
2277.873	Ir	10	15	—	—	2274.65	Re	10	7	a	Me	2270.9	K	—	[30]	MI	—
2277.85	Rh	—	15	—	—	2274.64	Hf II	15	20	—	—	2270.860	Fe I	10	—	I	—
2277.76	Ni	10	—	—	—	2274.633	Co I	8	—	—	—	2270.68	Hf II	6	7	—	Me
2277.672	Fe I	25	—	—	—	2274.490	Co	9	2	—	—	2270.68	Mo	—	9	—	—
2277.64	Au II	—	10	—	—	2274.47	U	—	2	—	—	2270.61	Os	25	10	a	—
2277.58	W	20	10	—	—	2274.454	Pd II	—	20	—	—	2270.61	Lu	—	4 h	Me	—
2277.49	Cr	—	12	—	—	2274.40	W	7	—	—	—	2270.348	Fe II	2	4	m	—
2277.485	Ir	10	—	—	—	2274.38	Pt I	30	20	—	—	2270.345	Rh	—	20	—	—
2277.43	W	—	3	—	—	2274.38	Ta	—	5	—	—	2270.332	Mo	—	5	—	—
2277.423	Cb	3	—	—	—	2274.35	Mo	—	5	—	—	2270.239	W II	12	20	—	—
2277.405	Ag II	—	25 wh	—	—	2274.28	Os	—	25	—	—	2270.213	Ni II	100	400	—	—
2277.33	Au	—	8	—	—	2274.201	Cb	2	80	—	—	2270.209	Pd	—	40 wh	—	—
2277.28	Ni II	5	25	—	—	2274.2	bh C	12	—	L	—	2270.179	Cb	6	20	I	a
2277.21	Rh	—	25	—	—	2274.196	Ag	—	2	—	—	2270.17	Os	60	15	a	—
2277.16	Hf II	150	150	Me	—	2274.131	Cb	12	300	—	—	2270.11	Pd II	—	[40]	Bx	—
2277.153	Zr	10	—	—	—	2274.088	Fe I	15	15	I	—	2270.08	Sb	25	15	—	—
2277.096	Fe I	15	—	I	—	2274.07	Pt	10	—	—	—	2270.019	Ir I	20	3	—	—
2277.02	U	—	2	—	—	2273.92	Cb	—	8	—	—	2269.98	Co	—	3	—	—
2276.96	Rh	20	150	—	—	2273.88	Os II	—	[20]	Rf	—	2269.92	Hg I	—	[10]	Dj	—
2276.94	Mo	—	7	—	—	2273.86	Pr	—	10	—	—	2269.869	Mn	2 h	70	—	—
2276.94	Lu	8	20	Me	—	2273.81	Ni	8 W	4 h	—	—	2269.86	Hf	8	8 h	Me	—
2276.91	Co	—	2	—	—	2273.76	W	10	—	—	—	2269.860	Cb	3	15	—	—
2276.883	V I	3	—	—	—	2273.71	Ta	3	30	—	—	2269.82	Cd	—	3	—	—
2276.86	Pt	25	10	—	—	2273.67	Co	—	6 w	—	—	2269.792	W	3	3	—	—
2276.80	W	—	4	—	—	2273.624	V	—	6	—	—	2269.79	Re	3 h	10	a	—
2276.80	U	2	2	—	—	2273.565	Cb	15	25	—	—	2269.690	Mo	12	30	—	—
2276.70	Ti I	15	2	—	—	2273.36	U	—	15	—	—	2269.68	Os	15	—	a	—
2276.693	Zr	5	4 h	—	—	2273.36	Cr	—	20	—	—	2269.647	Cb	2	—	—	—
2276.667	V I	2	—	—	—	2273.31	Pd II	—	30	—	—	2269.598	Ir	12	3	—	Ab
2276.65	Re	40	3	a	—	2273.28	Ti I	10	2	—	—	2269.56	Ta	3	18	—	—
2276.578	Bi I	100 R	40	Om	—	2273.26	Mo	—	100	—	—	2269.54	Os	3	15	2	—
2276.532	Co	20 r	5	—	—	2273.25	Ag	—	3	—	—	2269.535	Cb	4	—	—	Me
2276.49	Zn	—	[3]	Bl	—	2273.24	Kr	—	[8]	Me	—	2269.449	W	—	3	—	—
2276.48	W	—	4	—	—	2273.21	Pr	—	10	—	—	2269.42	Mo	3	9	—	—
2276.445	Ni II	—	9	—	—	2273.18	Sc	—	10	Ex	—	2269.392	Zr	30	—	—	—

2269.2—2260.3 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities					
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
2269.212	Al I	15 R	-	-	Gn	2265.994	Fe II	4	10	-	-	2263.36	Hf II	2	-	2 h	Me
2269.21	Ta	3	12	-	-	2265.99	Au II	-	3 h	-	-	2263.323	Pt II	-	25	-	Sh
2269.202	Cb	1	3 w	-	Me	2265.98	Sn	-	[40]	-	Ar	2263.309	Cb	2	-	3 w	-
2269.128	Ti II	4	40	-	-	2265.98	W	3	-	-	-	2263.305	V	5	-	-	Me
2269.097	Fe I	12	-	-	-	2265.94	Xe II	-	[3]	-	Hu	2263.27	W	3	-	-	-
2269.093	Al I	60 R	25	-	Gn	2265.88	Ag II	-	2 h	-	-	2263.26	U	-	3	-	-
2269.085	W	-	3	-	-	2265.81	Cd II	-	30	-	-	2263.228	Fe II	-	30	-	-
2268.910	Sn	100 R	100 R	-	m	2265.75	Pd II	-	3 h	-	-	2263.220	Cb	1	5	-	-
2268.898	Ir I	25	30	-	Ab	2265.742	Co II	3	5	-	-	2263.212	Cu II	-	10	-	Sh
2268.847	Fe II	-	10	-	-	2265.72	Se	-	[5]	-	Bl	2263.16	Yb	-	3 h	-	Me
2268.84	W	-	2 h	-	-	2265.69	I	-	[30 l]	-	Bl	2263.079	Cu I	30	10	-	IBu
2268.84	Pt	25	20	-	-	2265.671	Cb	5	20 w	-	-	2262.98	Se	-	[5]	-	Bl
2268.748	Ti I	7	-	-	-	2265.666	W	8	7	-	-	2262.95	Xe II	-	[2]	-	Hu
2268.746	Co I	12	-	-	-	2265.65	Yb	3	50	-	Me	2262.900	Ni II	-	4	-	-
2268.72	Xe II	-	[3]	-	Hu	2265.62	Xe II	-	[3]	-	Hu	2262.900	Pt II	-	5 h	-	Sh
2268.64	Yb	-	3 h	-	Me	2265.592	Cb	-	50 Wh	-	Me	2262.79	U	-	2 h	-	-
2268.562	Fe II	-	8	-	-	2265.59	Fe I	4	-	-	-	2262.73	Au	-	8	-	-
2268.530	U	-	2	-	-	2265.58	La II	-	3	-	-	2262.680	Fe II	6	12	-	-
2268.523	Cb	8	15	-	-	2265.55	Te I	-	[10]	-	Bl	2262.662	Pt II	4	25	-	Sh
2268.47	Hf	2	2 h	-	Me	2265.52	Mo	-	8	-	-	2262.598	Co I	10	-	-	-
2268.47	Mo	-	20	-	-	2265.51	Zn II	-	[10]	-	Vs	2262.538	Sb	40	25	-	-
2268.40	Ir	20	-	-	-	2265.458	Cu	-	15	-	-	2262.484	Pd II	-	30	-	-
2268.361	V	-	40	-	Me	2265.454	Ir I	12	3	-	-	2262.43	Ir	-	6	-	-
2268.28	Yb	1	4	-	Me	2265.39	Os	5	-	-	-	2262.405	V	-	5	-	-
2268.28	Os	40	10 l	-	a	2265.354	Ni II	-	5	-	-	2262.4	bh C	12	-	-	L
2268.168	Co I	15	2	-	-	2265.353	Cu II	-	5	-	-	2262.36	U	-	2	-	-
2268.15	Cr	9	-	-	a	2265.350	W II	5	10	-	-	2262.32	W	-	8	-	-
2268.139	Fe II	-	12	-	-	2265.17	Mo	-	2	-	-	2262.32	Os	25	7	-	a
2268.132	Ru	10	1	-	-	2265.163	Ir	5	50	-	-	2262.30	Pd	-	[15]	-	Bx
2268.13	Yt II	2 h	2 h	-	-	2265.06	In	-	6	-	-	2262.30	Ta	12	20 l	-	-
2268.09	W	-	2	-	-	2265.050	Fe I	10	-	-	I	2262.29	Cb	-	4	-	-
2268.04	Rb	-	[20]	-	Fa	2265.04	K	-	[30]	-	MI	2262.29	Br	-	[2]	-	Lc
2267.91	Hf	3	3 h	-	Me	2265.02	Te	-	[10]	-	Bl	2262.29	Cd	3	-	-	Fl
2267.910	Ti I	7	-	-	-	2265.017	Cd II	25 d	300	-	Hz	2262.261	Fe II	-	4	-	Do
2267.71	Ir	-	5	-	-	2264.95	Mo	-	4	-	-	2262.25	Yb	2	30	-	Me
2267.66	Cs II	-	[20]	-	Rf	2264.92	Cr	-	10	-	-	2262.233	Hg II	-	[100]	-	Ps
2267.612	V	-	2	-	Me	2264.89	Ce	-	20	-	-	2262.141	Pd II	-	25	-	-
2267.600	W	-	10	-	-	2264.874	Co	15	-	-	-	2262.131	Cb	3	5	-	-
2267.588	Fe II	2	35	-	-	2264.742	Mo	-	18	-	-	2262.1	K	-	[10]	-	Sg
2267.58	Hf	3	3 h	-	Me	2264.68	Pd II	-	[3]	-	Bx	2261.976	Mo	5 h	15	-	-
2267.556	Ni I	10	-	-	-	2264.63	Lu	-	2	-	Me	2261.940	W	-	6	-	-
2267.51	Ta	-	4 h	-	-	2264.607	Ir I	30	15	-	-	2261.850	V	-	5 w	-	-
2267.47	Cd	20	30	-	-	2264.591	Fe II	-	20	-	-	2261.8	A II	-	[10]	-	Rt
2267.466	Fe I	15	-	-	-	2264.553	Cb	2	8	-	-	2261.75	Rh	2	100	-	-
2267.35	Hf II	3	3 h	-	Me	2264.457	Ni II	150	400	-	-	2261.73	Os	25 l	50 l	-	-
2267.29	W	-	4	-	-	2264.418	Co	10	2	-	-	2261.727	Cb	2	2	-	-
2267.26	Ta	-	4 h	-	-	2264.389	Fe I	35	5	-	I	2261.7	K	-	[2]	-	Sg
2267.240	Pt	5	20	-	-	2264.35	Mo	4	10	-	-	2261.67	Cr	8	15	-	a
2267.19	Ca	-	2	-	Ad	2264.30	U	5	2 h	-	-	2261.66	Te	-	[15]	-	Bl
2267.190	Sn	15	10	-	-	2264.282	Pd II	-	25	-	-	2261.621	Ta	6	12	-	-
2267.12	Mo	-	8	-	-	2264.20	Xe II	-	[3]	-	Hu	2261.61	Ti II	-	8	-	-
2267.101	Co I	12	-	-	-	2264.20	Mo	-	5	-	-	2261.55	Co	-	8	-	-
2267.078	Fe I	8	2	-	-	2264.182	W II	3	12	-	-	2261.54	Hf	3	3 h	-	Me
2266.97	U	-	6	-	-	2264.172	Ir I	12	3	-	-	2261.530	Cb	2	3	-	-
2266.95	Pd II	3	20	-	-	2264.15	Co	-	2	-	-	2261.51	Nd	-	2	-	-
2266.946	B II	-	2 w	-	-	2264.140	Rh	50	25	-	-	2261.47	U	2	2	-	-
2266.929	Ir I	5	-	-	-	2264.08	Nd	-	15	-	-	2261.424	Ni I	12	3	-	-
2266.899	Fe I	15	-	-	-	2264.074	Cb	2	3 h	-	Me	2261.418	Ta	12	15	-	-
2266.84	Ga	-	3	-	-	2264.022	Ti	15	-	-	-	2261.34	Au II	-	3	-	-
2266.83	Hf II	60	80	-	Me	2264.00	Rb	-	[10]	-	Fa	2261.3	In	-	5	-	-
2266.80	Xe II	-	[3]	-	Hu	2263.987	Pt II	-	20 w	-	Sh	2261.29	Pd	-	[20]	-	Bx
2266.80	Co	-	5	-	-	2263.985	W	-	7	-	-	2261.29	Co	-	2	-	-
2266.726	Cb	3	10	-	-	2263.98	Lu	-	3	-	Me	2261.195	Gd	25	3	-	-
2266.70	As I	12	-	-	-	2263.97	Re	12	2 h	-	a	2261.188	Ti II	5	35	-	-
2266.699	Fe II	-	5	-	Do	2263.970	Ir	4	10	-	Ab	2261.12	Yb	-	3	-	Me
2266.67	Cr	10	-	-	a	2263.91	Os	-	15	-	-	2261.085	V	5	15	-	-
2266.634	Ir	2	-	-	Ab	2263.85	Yb	-	2	-	Me	2260.854	Cb	3	-	-	-
2266.58	Mn	-	10	-	a	2263.82	I	-	[12]	-	Bl	2260.853	Fe II	12	12	-	-
2266.57	Os	20	4	-	a	2263.804	Ir I	10	-	-	Ab	2260.83	V	-	4	-	-
2266.53	Co	-	35	-	-	2263.780	Cu II	-	25	-	Sh	2260.79	Lu	-	2	-	Me
2266.52	Hf II	30	40	-	Me	2263.76	Re	-	8	-	a	2260.751	Mo	-	5	-	-
2266.52	Ta	10	-	-	a	2263.75	Mo	-	4	-	-	2260.65	Ir	3	40	-	-
2266.44	Pd II	-	3 h	-	-	2263.731	Al I	4 h	1 h	-	Gn	2260.6	K	-	[30]	-	Sg
2266.417	Pt	-	20	-	-	2263.72	Au II	-	3 h	-	-	2260.600	Fe	10	-	-	-
2266.41	W	-	3	-	-	2263.64	Hg	-	[10]	-	Ps	2260.58	W	-	5	-	-
2266.352	Ni I	20	2	-	-	2263.63	Pd II	-	[2]	-	Bx	2260.56	Ta	-	20 l	-	-
2266.331	Ir I	25	10	-	-	2263.62	Rb	-	[2]	-	Fa	2260.54	Nd	-	10	-	-
2266.324	B II	-	2 w	-	-	2263.612	V II	-	3	-	Me	2260.53	Pd	-	25	-	-
2266.26	W II	7	7	-	-	2263.55	Co	-	5 w	-	-	2260.528	Cu I	25	6	-	IBu
2266.249	Fe II	-	8	-	-	2263.535	W	7	25	-	-	2260.52	Mo	-	5	-	-
2266.22	Mo	-	18	-	-	2263.499	Ru	10	1	-	-	2260.51	Re	10	25	-	a
2266.130	W II	8	8	-	-	2263.474	Fe I	6	-	-	-	2260.497	Pt II	-	25	-	-
2266.09	Re	25	2 h	-	a	2263.453	Al I	60 R	25	-	Gn	2260.45	Pd II	-	[18]	-	Bx
2266.04	Sn	3	8	-	-	2263.43	Rh	5	200	-	-	2260.40	Lu	-	4	-	Me
2266.00	Zn II	-	[250]	-	Vs	2263.367	Os	6	15	-	-	2260.36	Au	-	5	-	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2260.35	Os	5	-	a	2256.76	La II	2 h	30	-	2253.87	Mg II	8	-	Fl
2260.32	K	-	[30]	MI	2256.752	Ir I	2	-	-	2253.86	Ni II	100	300	-
2260.260	Hg II	-	[200]	Ps	2256.74	Co	-	35	-	2253.802	Cb	3	-	Me
2260.25	Hf	2	2 h	Me	2256.67	Cr	-	5	-	2253.776	Co	10	-	-
2260.25	Ta	2	3	-	2256.573	Co I	10	-	-	2253.74	Pd	-	[2]	Bx
2260.228	Fe II	-	5	Do	2256.56	Xe II	-	[3]	Hu	2253.66	Ni II	-	10	-
2260.13	Pd II	-	25	-	2256.51	Ta	6	18	a	2253.655	Pd	2	25	-
2260.11	Os	25	50	-	2256.433	Fe II	-	10	-	2253.64	Ru	50	-	a
2260.080	Ru	4	-	-	2256.43	Ir	-	10	-	2253.59	Zn II	-	[3]	Vs
2260.079	Fe II	9	15	I	2256.26	Hf II	1	2	Me	2253.55	Ni I	10	-	-
2260.07	W	15	3	-	2256.227	Ir	5	-	Ab	2253.51	W	-	3	-
2260.01	Co	2	25	-	2256.22	Re	40	7	a	2253.50	Co	-	12	-
2259.991	In I	10 R	1	Ps	2256.21	W II	6	4	-	2253.50	Nd	-	25	-
2259.690	W II	-	5	-	2256.146	Ni II	-	10	-	2253.487	Ir	10	3	-
2259.66	O II	-	[5]	Mh	2256.11	Cd	-	[2]	Bl	2253.46	Au II	-	5	-
2259.64	U	-	8	-	2256.104	Pt II	-	20	Sh	2253.457	Ag II	-	50 wh	-
2259.63	Os	10	2	a	2256.070	Cb	2	-	-	2253.375	Ir	4	-	Ab
2259.589	Fe II	-	20	Do	2256.05	Cr	-	50	-	2253.34	Sr I	3	[3]	Fl
2259.571	Ni I	300 w	-	-	2256.018	W	-	10	-	2253.31	Cb	2 h	-	-
2259.57	Si I	3	-	Fl	2256.00	Ge I	2	1	-	2253.28	Ta	2	12	-
2259.555	W	12	7	-	2255.980	Fe II	1	3	-	2253.272	Zr	15	-	-
2259.55	Ta	4	12	-	2255.91	Au II	-	5	-	2253.25	Ti II	1	12	-
2259.511	Fe I	25	-	I	2255.878	Ni I	10	-	-	2253.23	Ir	-	25	-
2259.45	Pt	-	10 w	-	2255.860	Fe I	20	-	I	2253.18	Mo	-	25	-
2259.32	Pd II	-	[5]	Bx	2255.847	Os	125	2	-	2253.16	Cl	-	[30]	Ks
2259.279	Fe I	6	-	-	2255.810	Ir I	25	10	-	2253.130	Pt II	-	25	-
2259.27	Ir	-	35	-	2255.788	In II	-	[10]	Ps	2253.124	Fe II	12	30	I
2259.224	Ga	2	2	-	2255.77	Ta	3 l	20	-	2253.06	Zn II	-	[10]	Vs
2259.22	Xe II	-	[2]	Hu	2255.77	Cd	-	[2]	Bl	2253.040	Ir I	10	2	-
2259.068	W II	3	10	-	2255.763	Fe II	-	20	-	2253.02	W	-	3	-
2259.04	Te I	-	[10]	Bl	2255.75	Re	30	7	a	2253.0	K	-	[5]	MI
2259.03	Pd II	-	[3]	Bx	2255.72	W II	2 h	-	-	2253.00	Os	10	-	-
2259.01	Re	10	-	a	2255.694	Rh	-	15	-	2252.950	V	-	8	-
2258.975	Os	3	25	-	2255.65	Co	-	4	-	2252.90	O II	-	[10]	Fl
2258.856	Ir I	30	10	-	2255.64	Cl	-	[4]	Bl	2252.886	Ni	1	5 h	-
2258.813	V	25	30	-	2255.625	Ir I	10	-	Ab	2252.88	Mo	-	5	a
2258.77	Hg I	5	3	Dj	2255.594	Ir I	10	-	-	2252.87	A	-	[2]	Rt
2258.717	Pt II	-	18	Sh	2255.593	Cb	8	20	-	2252.82	Co	-	2 w	-
2258.71	Ta	-	25	-	2255.521	Ru	80	3	-	2252.80	Ta	-	15	-
2258.68	Hf II	15	20	Me	2255.52	W	3	-	-	2252.780	Hg II	-	[50]	Ps
2258.59	Co	-	2	-	2255.48	Te I	-	[10]	Bl	2252.74	O II	-	[10]	Mh
2258.55	Pd	-	5	-	2255.418	Rh	-	20	-	2252.731	Co I	10	-	-
2258.508	Ir I	15	50	-	2255.41	Os	12	-	a	2252.71	He II	-	[10]	Ps
2258.372	Fe II	-	2	Do	2255.29	Ga	-	3	-	2252.681	V I	3	-	Me
2258.36	W	-	3	-	2255.29	K II	-	[10]	MI	2252.68	Os	10	-	a
2258.332	Os	12	35	-	2255.27	I	-	[30]	Lc	2252.65	Ca	-	2	Ad
2258.328	Co	9	-	-	2255.260	Rh	-	10	-	2252.620	Cb	-	4	-
2258.250	Rh	-	25	-	2255.172	Cb	-	2	-	2252.618	Pd II	-	10 h	-
2258.22	Mo	-	5	-	2255.15	Hf II	40	60	Me	2252.59	Nd	-	9	a
2258.19	Nd	-	2	-	2255.150	Fe II	-	12	-	2252.56	Re	10	2 h	a
2258.146	Ni I	15	2	-	2255.103	W	-	6	-	2252.45	U	-	8	-
2258.128	W	10	8	-	2255.101	Ir I	25	10	-	2252.406	Mo	-	20	-
2258.06	Mo	-	4	-	2255.08	Cu	1	30	-	2252.38	Zr	-	2 h	Ks
2258.02	U	-	3	-	2255.034	Ga	2	-	Uh	2252.38	Co	-	3 w	-
2257.999	Al I	8	-	Gn	2254.987	W	-	10	-	2252.36	W	10	-	-
2257.89	Ni	-	12	-	2254.971	Cu II	3	10	-	2252.298	Ir	5	-	-
2257.89	Hf II	10	15	Me	2254.949	Cb	5	10	-	2252.28	W	-	3	-
2257.881	Cb	15	-	-	2254.94	Cs II	-	[20]	Rf	2252.26	A II	-	[5]	Rt
2257.880	Zr	2	3 h	-	2254.91	Ir	-	10	-	2252.22	Os	-	4	-
2257.86	Co	-	3 w	-	2254.897	Fe II	-	3 h	-	2252.206	Cb	5	35	-
2257.81	Cr	-	10	-	2254.89	Se	-	[10]	Bl	2252.15	Os	10	-	a
2257.8	K	-	[2]	MI	2254.86	Ta	3	10	-	2252.03	Mo	-	5	-
2257.741	W	-	6	-	2254.832	Co I	-	10	-	2252.03	Pd II	-	30	-
2257.705	Mo	-	8	-	2254.82	Re	30	6	a	2251.93	W	-	10	-
2257.67	Fe	3	-	-	2254.80	Ni I	10	3	-	2251.926	Pt II	-	15 w	-
2257.587	Co	10	-	-	2254.732	Ba II	10	10	Sz	2251.88	Cu II	1	2 h	-
2257.537	Cb	3	10	-	2254.70	Mo	-	8	-	2251.872	Fe I	12	70	-
2257.50	Pb	4	-	-	2254.69	Os	12	3 l	a	2251.85	Hf II	8	9	Me
2257.50	Ir	2	50	-	2254.57	W	10	4	-	2251.842	Co I	8	-	-
2257.48	Cr	-	4	-	2254.557	Cb	10	2	-	2251.60	Re	2 h	25	a
2257.40	Ca I	2	-	Sd	2254.52	U	-	4	-	2251.559	Fe II	4	4	-
2257.375	Ag II	-	5	-	2254.47	Ir	2 h	10	-	2251.555	V	-	8	-
2257.26	Nd	-	15	-	2254.45	Os	-	10	-	2251.521	Pt II	3	30	-
2257.238	Rh	-	25	-	2254.448	Pd II	-	9	-	2251.52	Cr	-	20	-
2257.19	Mo	-	12	-	2254.390	Fe II	-	2	-	2251.50	Pd II	7	35	-
2257.13	Pt	12	6 w	-	2254.26	Pd I	25	8	-	2251.50	Cl	-	[40]	Ks
2257.100	W	-	10	-	2254.24	Rb	-	[70]	Fa	2251.48	Rb	-	[2]	Fa
2257.01	Yb	4	40	Me	2254.22	Re	18	10	a	2251.48	Ni I	10	3	-
2256.99	Ir	-	5 h	-	2254.20	Zr II	-	2 h	Ks	2251.42	W II	8	10	-
2256.983	Mo	-	12	-	2254.078	Fe II	-	10 h	Do	2251.33	Mo	-	30	-
2256.982	V I	25	15	-	2254.07	Rh	3	25	-	2251.29	Re	15	-	a
2256.93	Mn	3	12	a	2254.05	Re	15	-	a	2251.223	Ir	2	-	-
2256.897	Fe II	-	15 h	Do	2254.008	Hf II	60	80	-	2251.15	Sn	25	50	-
2256.850	W	10	12	-	2253.95	Pb	40	5	-	2251.13	W II	10	10	-
2256.849	Ir I	6	-	-	2253.91	W	-	10	-	2251.120	V	-	2	-

2251.1—2241.7 Å.

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2251.116	Co	-	-	8	-	2247.869	Co I	4	-	-	-	2244.29	Cb	-	-	8	-
2251.09	U	-	-	3	-	2247.70	Cr	-	-	8	-	2244.265	Cu I	25	-	9	IBu
2250.96	Cl	-	-	[20]	Ks	2247.70	Hg	-	-	[5 h]	Dj	2244.25	Yb	-	-	8 h	Me
2250.930	Fe II	5	-	20	-	2247.692	Fe II	-	-	50	Do	2244.23	Ir	-	-	10	-
2250.92	K	-	-	[30]	MI	2247.68	Os	40	-	6	a	2244.23	Hf	4	-	4 h	Me
2250.87	Nd	-	-	15	-	2247.67	W	3	-	12	-	2244.21	Al II	-	-	[2]	Sy
2250.86	Os	4	-	-	-	2247.66	Ir	1	-	20	-	2244.20	Ag	2 h	-	2 h	-
2250.82	Rh	-	-	5 w	-	2247.593	Pt II	-	-	10 w	Sh	2244.184	Cb	-	-	3 w	Me
2250.776	Fe I	10	-	-	-	2247.516	V I	5	-	-	-	2244.16	W	2 h	-	10	-
2250.76	Ta	12	-	25 l	-	2247.51	Re	4	-	7	a	2244.12	Re	15	-	4	a
2250.748	Zr	35	-	-	-	2247.5	bh C	-	-	-	-	2244.12	Cr	-	-	20	-
2250.73	W	10	-	12	-	2247.46	Fe	12	-	3 w	-	2244.10	U	-	-	2	-
2250.73	Rb	-	-	[5]	Fa	2247.40	Pd II	-	-	[3]	Bx	2244.00	Xe	-	-	[3]	Dj
2250.682	V I	12	-	[30]	-	2247.32	W	-	-	4	-	2243.94	Os	8	-	20	-
2250.631	Pt II	8	-	20	-	2247.23	Ni II	2	-	12	-	2243.91	Fe I	3	-	-	-
2250.510	Co	10	-	2	-	2247.11	Mo	-	-	15	-	2243.90	Pd	3	-	20	-
2250.493	V	-	-	3	-	2247.08	U	-	-	8	-	2243.90	Co	-	-	4 w	-
2250.465	Cb	5	-	15	-	2247.04	Ge	2	-	-	-	2243.861	Ta	3	-	25	-
2250.46	Zr	II	-	2	-	2247.01	Pd II	-	-	8	-	2243.818	Mo	-	-	10	-
2250.45	W	-	-	3	-	2246.995	Cu II	30	-	500	IBu	2243.80	Cd	-	-	[2]	BI
2250.39	Co	-	-	3	-	2246.99	Sb	-	-	4	Sp	2243.742	V I	5	-	-	Me
2250.33	Re	3	-	7	a	2246.98	Cb	-	-	2	-	2243.67	Mn	-	-	5	-
2250.32	Kr	-	-	[8]	Me	2246.98	W	-	-	5	-	2243.66	Ti	-	-	2	Sd
2250.303	Cb	10	-	2	-	2246.95	Mo	-	-	20	-	2243.65	U	-	-	30	-
2250.3	A II	-	-	[20]	Rt	2246.929	Cd II	-	-	2	-	2243.62	Cr	-	-	-	-
2250.25	Mo	-	-	20	-	2246.907	Fe II	-	-	20	-	2243.587	Fe II	-	-	2	-
2250.24	Ag	-	-	3	-	2246.90	Ir	10	-	100	-	2243.541	Pd	-	-	20	-
2250.169	Fe II	5	-	15	-	2246.888	Pb	30 R	-	100 R	-	2243.54	Os	10	-	-	a
2250.07	Ti II	2	-	20	-	2246.80	Cd	-	-	[2 d]	BI	2243.50	W	-	-	10	-
2250.03	I	-	-	[100]	Lc	2246.77	Bi	8	-	-	To	2243.465	V	-	-	2	-
2250.004	Cb	2	-	5 w	-	2246.761	Cb	-	-	10	-	2243.44	Ag II	-	-	15 h	Bx
2250.00	O II	-	-	[2]	FI	2246.68	Au II	-	-	18	-	2243.4	K II	-	-	[5]	Sg
2249.93	Mo	18	-	18	-	2246.63	W II	6	-	12	-	2243.37	U	-	-	2	-
2249.90	Pt	25	-	6	-	2246.505	Pt II	2	-	10	Sh	2243.32	Os	2	-	10	a
2249.88	Nd	-	-	-	-	2246.495	Cb	-	-	4	-	2243.311	Sn	-	-	8 w	Ar
2249.86	Xe II	-	-	[2]	Hu	2246.47	Nd	-	-	12	-	2243.31	Cr	-	-	25	-
2249.84	W	10	-	-	a	2246.47	Re	25	-	5	a	2243.29	Re	15	-	7	a
2249.82	Hf	5	-	5 h	Me	2246.43	Au	-	-	15	-	2243.267	V	3	-	-	-
2249.79	Ta	12	-	25 l	-	2246.423	Cb	3 h	-	-	-	2243.257	Co I	10	-	-	-
2249.77	Cr	3	-	20	a	2246.418	Bi	-	-	2	Om	2243.220	Ru	20	-	1	-
2249.62	In II	-	-	[25]	Pa	2246.412	Ag II	25	-	300 hs	-	2243.21	Ni I	3	-	-	-
2249.53	Cb	-	-	20 w	-	2246.38	Rh	-	-	50	-	2243.189	P I	-	-	[2]	Ri
2249.53	Lu	-	-	2 h	Me	2246.36	W	4	-	6	-	2243.18	Hf II	15	-	20	Me
2249.51	Os	5	-	-	a	2246.333	V	-	-	2	-	2243.17	Pd	-	-	[2]	Bx
2249.51	Pd II	-	-	8	-	2246.32	K	-	-	[5]	MI	2243.150	Fe	-	-	10 h	-
2249.50	W	10	-	-	a	2246.23	U	-	-	4	-	2243.10	Cu II	-	-	[6]	Sh
2249.46	Re	20	-	-	a	2246.175	Cb	10	-	-	-	2243.060	Yt	25	-	35 w	-
2249.43	Ru	8	-	-	a	2246.15	Co	-	-	3 w	-	2243.05	Al II	-	-	[30]	Sy
2249.406	Ir I	4	-	10	-	2246.13	Ag II	1	-	4 h	-	2242.962	Cb	4	-	-	-
2249.39	W II	2 h	-	3 h	-	2246.07	Rh	-	-	15	a	2242.96	W	3	-	8	-
2249.382	Bi I	15	-	-	-	2246.053	Sn II	100 R	-	100 R	-	2242.90	Co	-	-	4 w	-
2249.33	Mo	4	-	18	-	2246.05	Mo	-	-	15	-	2242.88	Ni I	3 h	-	-	-
2249.31	U	-	-	3	-	2245.97	A	-	-	[5]	Rt	2242.76	Ni	-	-	8 h	-
2249.30	Pt	25	-	12	-	2245.766	V I	10	-	-	-	2242.75	Ta	4	-	-	-
2249.175	Fe II	10	-	50	I	2245.76	Ir	10	-	150	-	2242.71	Au	-	-	30	-
2249.074	V	-	-	10	-	2245.654	Fe I	12	-	-	-	2242.71	W	-	-	8	-
2249.07	Mo	-	-	20	-	2245.613	Ba II	12	-	12	Sz	2242.68	Ir	50	-	300	-
2249.07	Au II	-	-	8 h	-	2245.600	Co I	10	-	-	-	2242.68	U	-	-	2	-
2249.06	Cu II	-	-	25	-	2245.518	Pt II	25	-	30	-	2242.614	V	5	-	-	Me
2249.01	Rb	-	-	[2]	Fa	2245.505	Fe II	-	-	50	Do	2242.613	Cu II	25	-	50 h	IBu
2248.988	Co I	5	-	-	-	2245.502	Ir	4	-	-	-	2242.610	Pb	15	-	15	-
2248.857	Fe I	35	-	-	I	2245.464	Co I	5	-	-	-	2242.579	Cb	5	-	50 hl	Me
2248.84	Cb	-	-	5	Me	2245.44	Au	-	-	10	-	2242.54	Pd	-	-	[7]	Bx
2248.82	U	-	-	4	-	2245.43	Re	12	-	5	a	2242.492	P I	-	-	[2]	Ri
2248.750	W II	20	-	25	-	2245.39	Kr	-	-	[10]	Me	2242.47	Ge I	2	-	-	-
2248.74	Rh	20	-	3	-	2245.25	Os	20	-	-	a	2242.43	Cd	-	-	[2]	BI
2248.74	Au	-	-	7	-	2245.21	W II	10	-	20	-	2242.41	Re	25	-	10	a
2248.740	Ag II	15	-	150 wh	-	2245.14	Re	15	-	2 h	a	2242.351	Ir	8	-	-	-
2248.72	Nd	-	-	4	-	2245.127	Co II	15	-	35	-	2242.338	Fe II	-	-	3	-
2248.7	Hf	-	-	2	MD	2245.12	Pd II	-	-	5 h	-	2242.33	Ce	-	-	60	-
2248.66	Co II	2	-	5	-	2245.08	Ni I	1	-	4	-	2242.288	Cb	5	-	3	-
2248.58	Re	12	-	-	a	2244.97	Pt I	25	-	10	-	2242.24	Ir	-	-	15	-
2248.56	Cr	3	-	20	-	2244.932	Ir	10	-	2 h	-	2242.21	Mo	-	-	25	-
2248.49	Os	6	-	2	a	2244.93	Cb	-	-	2	-	2242.17	Pr	-	-	10	a
2248.48	Ta	4	-	20	-	2244.93	U	2	-	-	-	2242.15	Ni II	-	-	4	-
2248.33	Cr	3	-	20	-	2244.90	Ni	1	-	8	-	2242.14	Cu II	-	-	[6]	Sh
2248.275	Cb	-	-	10	-	2244.8	A	-	-	[2]	Rt	2242.10	Os	30	-	5	a
2248.26	W II	12	-	15	-	2244.76	W	-	-	3	-	2242.06	W	12	-	10	-
2248.18	Co	-	-	3 w	-	2244.68	Ti I	10	-	-	-	2242.05	Rh	25	-	25	-
2248.05	Zr I	40	-	-	-	2244.611	Fe II	-	-	3	-	2241.86	Xe II	-	-	[4 h]	Hu
2248.03	Pd	-	-	8	-	2244.53	Ni I	40	-	-	-	2241.842	V I	25	-	-	-
2248.03	U	-	-	25	-	2244.48	Ni I	15	-	3	-	2241.84	Cr	-	-	30	-
2248.0	A	-	-	[20]	Rt	2244.45	Co	2	-	2	-	2241.840	Fe	6	-	2	-
2247.993	Cb	10	-	-	-	2244.44	W II	-	-	3	-	2241.807	Ag II	-	-	10 h	-
2247.92	Cr	-	-	12	-	2244.388	Fe II	-	-	10	-	2241.75	Nd	-	-	12	-

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2241.664	In I	3	-	Ps	2238.259	Fe I	5	-	-	2234.915	Pt I	25	15	-
2241.66	Ni	-	8 h	-	2238.21	Ti	5	-	-	2234.86	Ir	-	10	-
2241.654	Co I	9	-	-	2238.2	A II	-	[60]	Rt	2234.86	Fe	2	-	-
2241.63	Mo	-	4	-	2238.19	Rh	8	-	a	2234.85	W	-	4	-
2241.62	Os	25	2 w	a	2238.02	U	-	3	-	2234.714	Co I	12	-	-
2241.535	V	-	200	-	2237.897	Fe	-	12	-	2234.673	V I	6	-	-
2241.51	Pd II	-	[4]	Bx	2237.85	Ti I	60 R	3	-	2234.616	W	10	5	-
2241.36	Cr	-	15	-	2237.84	Bi	2	-	To	2234.61	Os	35	9	a
2241.34	Ag	-	10	-	2237.814	Fe	2	-	-	2234.500	Mo	-	8	-
2241.28	W	10	2 h	a	2237.80	Ti	-	3	-	2234.43	Zr II	2	1	-
2241.27	Co	-	4 w	-	2237.721	Pd II	-	20	-	2234.429	Fe	4	-	-
2241.213	V I	5	-	Me	2237.71	Rh	-	100	-	2234.38	Ir	5	80	-
2241.21	Pt	12	-	-	2237.58	Cr	-	40	-	2234.37	Rb	-	[2]	Fa
2241.17	Mo	-	4	-	2237.56	Pt	2	-	-	2234.34	Kr	-	[2]	Me
2241.12	Se	-	[5]	Bl	2237.496	Cb	10	20 l	-	2234.256	W	-	10	-
2241.1	Hf	-	2	Md	2237.49	Au II	-	10	-	2234.25	Pd	-	[15]	Bx
2241.10	In I	10 R	-	-	2237.48	Yb	-	3	Me	2234.154	Ir I	20	-	-
2241.08	W	10	15	-	2237.44	U	-	15	-	2234.06	Hg II	-	3	Nu
2241.07	Ru	60	-	a	2237.43	Ir	2	-	-	2233.96	Cd	-	[2]	Bl
2241.017	Cb	-	6	-	2237.426	Pb	50 w	30 w	-	2233.94	U	-	2	-
2240.99	Cd	-	[2]	Bl	2237.37	Nd	-	7	-	2233.914	Fe II	-	35	-
2240.96	Ir	5	3 h	a	2237.3	Sr I	3	[3]	Sd	2233.90	Re	20	6	a
2240.89	Kr	-	[2]	Me	2237.30	Cb	-	2 h	-	2233.88	Ta	-	12	-
2240.89	K	-	[40]	MI	2237.29	Ta	2	12	-	2233.803	Ti I	15	2	-
2240.85	W	4	5	-	2237.227	V I	20	2	-	2233.80	Cr	-	20	-
2240.76	Pd I	4	-	Me	2237.15	Kr	-	[4]	Me	2233.754	Co I	10	-	-
2240.734	Co	6	-	-	2237.130	Co	10	-	-	2233.75	Nd	-	5	-
2240.646	Cb	10	15	-	2237.10	Rh	-	10	-	2233.70	Au	-	5	-
2240.64	Ir	-	15	-	2237.09	Ir	-	100	-	2233.56	Cb	-	4	-
2240.627	Fe	20	3 h	IMe	2237.06	W II	10	15	-	2233.46	Zr II	1 h	4	-
2240.622	V	-	100	-	2237.04	Mo	3	10 w	-	2233.370	Ir I	9	100	Ab
2240.58	Mo	-	4	-	2237.038	Ir	2	-	-	2233.172	Cb	3	-	-
2240.58	Pd II	3	-	-	2237.001	Ir	10	-	-	2233.110	Pt II	-	8 w	Sh
2240.45	Cd	-	[3]	Bl	2236.96	Cb	-	2 h	-	2233.099	Co	9	-	-
2240.423	Ir	20	30	-	2236.84	Pd II	3	8	-	2233.02	W	-	4	-
2240.388	Ag II	-	20 h	-	2236.83	Gd	-	5	Ex	2233.02	Re	2	5	a
2240.339	Fe II	2	3	-	2236.796	Co I	15	4	-	2232.98	Rh	-	25	-
2240.32	Cb	-	10	-	2236.76	S	-	[15]	Bl	2232.912	V	-	500	-
2240.31	Pt I	10	8	-	2236.75	Rh	2	8	-	2232.877	Co	4	-	-
2240.302	V I	3	-	Me	2236.725	Cb	5	10	-	2232.84	Xe	-	[2]	DJ
2240.28	Au II	-	5	-	2236.685	Fe II	-	3	-	2232.82	Os	10	1	a
2240.14	Nd	-	10	-	2236.619	Pd	-	7	-	2232.75	Mo	10	10	a
2240.14	Os	8	-	a	2236.58	U	-	3	-	2232.63	Pd	-	[4]	Bx
2240.14	I	-	[20]	Lc	2236.43	Kr	-	[2]	Me	2232.56	W	-	6	-
2240.13	Co	-	2	-	2236.42	Cb	-	2	-	2232.547	Cb	10	1	-
2240.13	U	-	4	-	2236.38	Rh	-	15	-	2232.471	Ir I	25	-	Ab
2240.09	Yb	5	25	Me	2236.38	Pd	10	-	-	2232.468	Co I	8	15 w	-
2240.09	Re	20	5	a	2236.34	Hf	4	4 h	Me	2232.44	U	-	4	-
2240.00	Rh	-	50	-	2236.32	Cd	-	5	-	2232.434	Mo	4	12	-
2239.86	U	-	2	-	2236.313	Fe	10	-	-	2232.31	Re	6	25	a
2239.86	Cd	80	30	m	2236.28	Ta	4	15	-	2232.27	W II	6	2 h	-
2239.86	Hf II	5	6	Me	2236.278	Cu I	30	-	IBu	2232.252	V I	6	-	Me
2239.85	Ru	8	-	a	2236.22	Cb	4	-	-	2232.248	Ir	30	50	Ab
2239.80	Co	-	4	-	2236.17	Lu	-	150 h	Me	2232.179	Ir I	5	-	Ab
2239.78	W	-	18	-	2236.103	Ga	2	5	Uh	2232.12	Mo	-	10	-
2239.72	Os	20	2	a	2236.08	Ni II	-	4	-	2232.08	Ru	12	-	a
2239.67	Zr	-	2 wh	-	2235.94	Ta	-	2 h	-	2232.078	Fe II	2	12	-
2239.643	Fe	-	4	-	2235.93	Cr	-	50	-	2232.066	Co II	6	18	-
2239.48	Ta	20	35 l	-	2235.89	Os	10	3	a	2231.956	W	-	7	-
2239.39	Mo	3	18	-	2235.87	W II	2 h	3	-	2231.892	Zr II	1	2	-
2239.28	W	3	5	-	2235.84	Ru	12	-	a	2231.81	Cr	-	18	-
2239.186	Zr	10	-	-	2235.79	Re	2 h	30	a	2231.749	Co I	6	-	-
2239.12	Os	5	-	a	2235.79	U	-	3	-	2231.72	Sn	30	60	a
2239.01	Ta	6	15	-	2235.77	A II	-	[40]	Rt	2231.69	Rh	3	2 w	-
2238.96	Re	10	-	a	2235.750	Ir	25	2 h	-	2231.67	K	-	[5]	MI
2238.91	N II	-	[8]	Fl	2235.734	P I	10	[1]	Ri	2231.662	Mn	-	70	-
2238.88	Mo	-	2 h	-	2235.67	Ta	-	5	a	2231.657	Ir I	25	5	-
2238.818	Ir I	30	5	-	2235.66	Mo	-	15	-	2231.59	Pd II	10	60	-
2238.81	I	-	[20]	Lc	2235.65	Os	15	5	a	2231.571	Cu II	-	15	Sh
2238.74	Ti I	15	-	-	2235.63	W II	10	10	-	2231.57	Tm	8	5	Me
2238.68	Ir	-	12	-	2235.53	Xe	-	[2]	DJ	2231.55	Yb	-	2	Me
2238.64	Re	40	4 h	a	2235.520	Fe II	-	8	-	2231.483	Mo	-	7	-
2238.629	Fe	-	10	Do	2235.46	Re	15	7	a	2231.434	Cb	3	-	-
2238.6	bh C	12	-	L	2235.45	Pt I	6	-	-	2231.418	V	15	-	-
2238.59	Ti	-	2	Sd	2235.41	Hf II	3	20 h	Me	2231.41	Hf II	3	3 h	Me
2238.57	Cd	-	3	-	2235.37	W	-	12	-	2231.36	Te	-	[5]	Bl
2238.56	W	6	6	-	2235.301	Pt II	5	25	-	2231.317	Pd II	-	10	-
2238.516	Cb	8	-	-	2235.30	Rh	2	25	-	2231.31	Au II	-	20	-
2238.47	Nd	-	10	-	2235.289	Ir	25	4	-	2231.24	W	-	10	-
2238.454	Cu I	40	-	IBu	2235.236	Pd	-	8	-	2231.22	Cl	-	[4]	Jv
2238.41	Mo	-	15	-	2235.18	N II	-	[3]	Fl	2231.211	Fe I	8	-	I
2238.41	Ag	-	10	-	2235.11	Co	-	5	-	2231.16	Os	12	50	-
2238.39	Ti	-	4 w	-	2235.09	Zr II	-	4	-	2231.08	Mo	-	6	-
2238.33	Ru	50	-	a	2235.05	Pd	-	[3]	Bx	2231.080	W	3	-	-
2238.288	Ir	-	80	-	2234.99	P I	6	-	Ke	2230.99	Ir	-	25	-

2230.9—2221.9 A.

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2230.954	Ni I	10	1	2228.11	W	10	1	2224.83	Yb	—	2
2230.948	Cu II	—	15	2228.09	Ce	—	25	2224.82	Hg	—	10 h
2230.945	Ti II	7	40	2228.04	Re	12	—	2224.80	Ir	—	25
2230.927	Zr	15	—	2228.028	Cb	8 w	1	2224.779	Cu II	—	25
2230.89	Re	10	—	2227.98	W	10	—	2224.76	A	—	[40]
2230.853	Cb	—	4 wh	2227.98	Os	30	30	2224.710	Hg II	—	[30]
2230.804	Ru	8	2	2227.92	Kr II	—	[30]	2224.675	W	—	6
2230.79	Xe II	—	[3]	2227.87	Ce	—	20	2224.668	Cb	5	30 hl
2230.75	Pd	—	[2]	2227.868	Co I	10	—	2224.66	Mo	—	8
2230.74	La II	2 h	7	2227.84	Ta	12	35 l	2224.60	Xe	—	[2]
2230.699	In I	5 R	—	2227.775	Cu I	40 r	25 r	2224.57	Os	12	3
2230.65	Rh	—	25	2227.70	Yb	—	3	2224.52	Pt	10	—
2230.64	Re	5	—	2227.70	A	—	[60]	2224.512	Ni II	—	—
2230.62	U	—	4	2227.697	Cb	5	3	2224.464	Fe II	1	12
2230.608	Bi I	100 R	30 R	2227.657	Co I	12	4	2224.45	Yb	20	40
2230.56	Mo	—	10	2227.64	Ru	30	—	2224.44	Re	6	5
2230.53	Ta	10	—	2227.616	Fe II	—	2	2224.41	W	—	4
2230.52	Co	—	10 W	2227.51	Pt	2	4	2224.39	Cd	—	3
2230.473	Ti I	5	—	2227.50	In	—	2	2224.358	Ni II	6	9
2230.441	Ir	20	20 l	2227.44	Mn	—	10	2224.29	Hf II	10	10 wh
2230.43	Pd II	—	[4]	2227.407	Fe II	—	2	2224.21	Re	10	3
2230.42	W	—	6	2227.39	V	5	—	2224.205	Bi	8	—
2230.40	Cu II	—	[10]	2227.39	Mo	12	—	2224.177	Pt II	—	10
2230.372	V I	8	20	2227.331	W	4	7	2224.14	Pd	—	[2]
2230.37	Pr	—	40	2227.31	Se	—	[5]	2224.09	W	—	6
2230.37	Cd	2	—	2227.274	Cb	4	—	2224.09	Co	—	10
2230.31	Ru	30	—	2227.23	Ta	—	12	2224.03	Hg II	—	5
2230.25	Os	20	—	2227.21	U	—	3	2224.02	Gd	—	3
2230.221	Ti I	20	—	2227.180	Fe II	—	8	2224.02	Lu	—	6 h
2230.084	Cu I, II	30 r	20	2227.157	Ti II	4	35	2223.96	Tm	6	5
2230.08	Mo	4	25	2226.93	Mo	—	7	2223.92	Mo	12	3
2230.04	Hg	—	5 h	2226.927	Cb	5	—	2223.85	Os	30	10
2229.988	V	3	10	2226.92	Re	30	—	2223.84	Re	7	—
2229.97	Mn	—	60	2226.864	Cu II	—	30	2223.726	Pd II	—	30
2229.97	I	—	[400]	2226.83	Os	25	15	2223.678	Cb	10	—
2229.86	Hg II	—	3	2226.793	W	4	10	2223.653	Ir I	—	3
2229.858	Ni II	—	6 h	2226.786	Ti I	10	—	2223.57	Cd	—	[2]
2229.850	Cu II	—	4 h	2226.78	Mo	—	7	2223.57	Pd	—	[2]
2229.8	In	2	—	2226.70	Cr	—	30	2223.466	Fe II	—	25
2229.780	Ir I	20	5 l	2226.572	W	5	4	2223.481	Pt II	—	10
2229.76	Pd II	—	[4]	2226.532	Rh	50	—	2223.36	Hf II	4	5
2229.739	V I	12	80	2226.525	Ta	—	25	2223.35	P I	6	—
2229.732	Co I	10	2	2226.45	Re	60	12	2223.31	Zr	1 h	2 h
2229.73	Ti	10	—	2226.34	W II	3	7	2223.31	Ta	—	15 l
2229.720	Cb	30	20	2226.332	Ni II	12	15	2223.31	Ra II	—	[8]
2229.66	Cb	12	—	2226.23	Os	20	5	2223.25	Pr	—	25
2229.626	W II	10	20	2226.15	Rb	—	[5 d]	2223.193	Mo	—	18
2229.59	Zn	—	[2]	2226.11	Ag II	—	20 h	2223.188	Ti I	15	—
2229.53	Ir	—	6	2226.07	Te	—	[15]	2223.18	Re	12	2 h
2229.523	Ag II	—	25 wh	2226.07	Mo	—	10	2223.099	Ir I	10	4
2229.5	A II	—	[2]	2226.06	Re	—	12	2223.08	Os	10	—
2229.43	U	2	—	2226.0	K	—	[5]	2223.079	Pd II	—	12
2229.31	Pt	—	25	2226.00	Xe	—	[2]	2223.026	V I	10	—
2229.28	I	—	[20]	2225.9	Sr I	8	—	2222.969	Ir	2	9
2229.254	Ti II	2	10	2225.893	W II	10	18	2222.96	Co	—	—
2229.220	Pd II	—	35	2225.848	Co	5	—	2222.944	Ni II	15	25 w
2229.218	Pt II	3	25	2225.82	Ni	—	8	2222.93	A	—	[60]
2229.11	Os	5	3	2225.787	V	4	—	2222.838	V I	6	—
2229.11	Sn	—	5	2225.697	Cu I	150	20	2222.78	W	—	3
2229.07	Fe	6	—	2225.66	Re	8	—	2222.78	Xe	—	[4]
2229.03	Au II	—	50	2225.550	Cb	3	2 w	2222.77	Mo	—	7
2228.94	Cs II	—	[15]	2225.54	W	8	2	2222.77	Re	10	3
2228.92	W	—	8	2225.48	Nd	—	9	2222.763	Fe	5	5 h
2228.863	Cu II	9	40	2225.44	Os	25	5	2222.73	Ge	2	—
2228.86	Si	—	[5]	2225.427	V I	15	2	2222.697	V	—	100
2228.835	V I	10	6	2225.35	Hf II	6	7	2222.67	Cd	—	[3]
2228.83	Ti II	3	10	2225.350	Co I	12	2	2222.61	Pt I	25	15
2228.806	Co I	12	—	2225.342	Ni I	5	—	2222.590	W	2 h	7
2228.78	Hf II	7	8	2225.339	Cb	8	—	2222.56	Au	—	15
2228.70	W II	5	2 w	2225.29	Pd	15	5	2222.53	Os	10	1
2228.671	Ir	10	2	2225.27	I	—	[30]	2222.49	Re	7	2 h
2228.66	As I	10	1	2225.27	Os	8	20	2222.450	Fe II	—	10
2228.53	Os	25	5	2225.226	W	2	4	2222.37	Os	8	—
2228.498	Pt II	—	15	2225.20	Cd	—	[10]	2222.33	Ni	—	4 w
2228.45	Hf	4	4 h	2225.18	Kr	—	[2]	2222.30	U	—	10
2228.41	Nd	—	12	2225.15	Sb	—	[10]	2222.29	Pd	—	30
2228.41	Mn	3	8	2225.124	Ti	18	—	2222.25	Co	—	4
2228.40	Pd II	—	[5]	2225.10	Ce	—	100	2222.22	Ta	—	6
2228.334	Co I	4	—	2225.096	Cb	—	5 wh	2222.216	Pt	3	15
2228.299	V	—	100	2225.029	V I	5	—	2222.08	Sb	25	15
2228.28	U	—	2	2224.97	Rh	—	30	2222.08	Cd II	—	[2]
2228.251	Bi I	100 R	50	2224.965	Zr	8	—	2222.07	W	3	10
2228.25	Cr	8	5	2224.94	Sb	30	25	2222.04	Ce	—	100
2228.18	Hf II	6	8	2224.67	Co	—	5	2221.99	V	—	10
2228.168	Fe I	10	6	2224.667	Ni II	15	25	2221.969	Rh	—	25

Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R	Wave-length	Element	Intensities Arc Spk., [Dis.]	R
2221.94	A	—	[40] Rt	2218.527	Ru	4	—	2214.79	Co II	9	12
2221.940	Ni I	10	—	2218.504	Os II	—	[25] Sh	2214.76	Os	5	30
2221.86	Kr	—	[4] Me	2218.46	Os	10	—	2214.69	He II	—	[5] Pa
2221.85	Ni	—	5	2218.428	V	—	125	2214.64	Yb	1	8
2221.85	W	12	—	2218.379	Ti I	4	—	2214.639	Ba II	2	6
2221.83	Fe	12	—	2218.37	Hf II	10	15	2214.63	Zr I	3	—
2221.8	bh C	30	—	2218.33	W	10	5	2214.59	Zr II	—	2
2221.71	Cb	—	2 w	2218.30	Os	5	20	2214.581	Cu I	50 r	5 h
2221.67	Mo	3	—	2218.26	Re	8	—	2214.41	Xe	—	[3] D ₁
2221.58	K	—	[30] MI	2218.248	V I	15	—	2214.407	Fe II	—	4
2221.54	Co	—	3	2218.158	Pd II	—	40	2214.34	Ta	3	12
2221.53	W	2 h	4	2218.11	Pr	—	18	2214.31	W	4	—
2221.52	U	—	2	2218.100	Cu II	25	40	2214.305	Ir I	10	2
2221.474	Cb	2	—	2218.08	Pb	50	40	2214.28	Pt	—	20
2221.47	Yb	—	2 h	2218.080	Si I	10	15	2214.27	Mo	2	25
2221.451	Ti	15	—	2218.053	Zr	5	—	2214.27	Re	100 W	100 W
2221.42	Cb	—	4	2218.039	Ga	2	—	2214.16	Os	25	10
2221.42	Rh	—	25	2217.993	V	—	3 wh	2214.160	Zr	20	—
2221.41	W	—	3	2217.94	W	—	2 h	2214.121	Bi I	7 h	1
2221.36	Os	15	2	2217.876	Mo	—	6	2214.038	Pd II	—	40
2221.28	Co	—	3	2217.87	Ag II	—	4 h	2214.033	Cb	8 w	—
2221.159	Fe II	—	25	2217.862	Cb	5	—	2214.016	V	—	100
2221.11	Ni	—	15 h	2217.82	Ta	8	40	2214.01	Mo	—	4
2221.09	Th	—	8	2217.80	Co	—	3 w	2213.96	Kr II	—	[5] Me
2221.07	Ir	2	100	2217.768	Ni I	10	1	2213.93	Pt	6	—
2220.99	Os	15	2	2217.762	W	6	6	2213.86	Co	4	4
2220.97	Mo	5	25	2217.74	Fe I	3	—	2213.849	Ni	5	—
2220.942	W II	8	18	2217.739	Ir	10	20	2213.82	Mn	60 r	10
2220.91	Fe I	3	—	2217.66	Hf II	2	2 h	2213.819	Co	7	—
2220.86	Sn	—	5	2217.58	Fe	3	—	2213.77	Ir	—	25
2220.80	Sb	30	20	2217.537	Pd II	2	25	2213.70	Cr	—	30
2220.76	Au II	—	10	2217.51	U	—	5 h	2213.70	Cd	—	2
2220.739	Rh	2	20	2217.413	V	—	150	2213.692	V I	6	—
2220.69	Ta	—	12 h	2217.340	Pt I	25	18	2213.654	Fe I	2	35
2220.662	Zr I	10	—	2217.324	Pd II	—	25	2213.65	Re	2 h	12
2220.64	I	—	[12] Lc	2217.32	Lu	—	3 h	2213.56	Os	10	5 wh
2220.60	Re	15	2 h	2217.28	Co II	4	10	2213.44	Mo	—	3
2220.54	Mn	—	40 w	2217.23	Cb	2 wh	20 w	2213.34	Os	—	15
2220.53	Au	—	7	2217.23	Os	20	3	2213.193	Ni II	2	12
2220.48	Hf	7	8 h	2217.23	K	—	[10] MI	2213.19	W	—	4
2220.450	V I	3	—	2217.20	Re	15	—	2213.18	Au II	—	12
2220.400	Ni II	10	25	2217.17	Mo	—	5	2213.18	Co	—	10
2220.374	Fe II	2	35	2217.12	Rb	—	[100] Fa	2213.1	K	—	[20] MI
2220.373	Ir I	50	10	2217.056	Fe II	—	10	2213.0	A	—	[60] Rt
2220.37	Ge I	3	—	2217.05	Ir	—	5	2212.931	Cb	—	4 w
2220.31	B II	—	6	2216.86	Al	5	—	2212.832	Cu	—	20
2220.281	Cb	—	3 w	2216.685	Si I	40	40	2212.83	Re	10	9
2220.25	Mo	12	—	2216.61	Mo	4	12	2212.81	Pd	—	10
2220.22	Zr	2 h	3 h	2216.61	Te	10	—	2212.80	Rh	15	10
2220.209	V	8	35	2216.577	Ba	2 h	—	2212.741	Cu II	—	[10] Sh
2220.20	Pd	—	[5] Bx	2216.52	Os	5	5	2212.47	Zr II	2	1
2220.193	Rh	20	1	2216.48	Pd I, II	3 w	—	2212.45	Hf II	25	30
2220.184	Cb	10	2	2216.480	Co	4	25	2212.44	Pd	2 h	—
2220.182	Ir	8	2 h	2216.473	Ni II	20	40 wh	2212.42	Ta	8	35
2220.09	Co II	10	18	2216.43	W	8	12	2212.354	Co I	9	—
2220.01	W	—	4	2216.31	Hg	—	[2] Dj	2212.32	Ir	—	50
2219.893	Fe II	2	20	2216.3	In	—	2	2212.29	Kr	—	[6] Me
2219.82	Os	6	4	2216.26	V I	3	—	2212.22	Os	10	—
2219.82	Mo	—	4	2216.19	Re	3	18	2212.22	A	—	[20] Rt
2219.77	Re	—	15	2216.11	La	2	25	2212.17	W	10	—
2219.748	Ti I	4	2	2216.1	bh C	20	—	2212.15	Ni I	12	2 h
2219.72	W II	15	4	2216.10	U	—	2 h	2212.14	Pd II	5	50
2219.712	Fe II	—	2	2216.034	V	—	100	2212.11	Re	9	—
2219.70	Ag II	—	15 h	2216.031	Ir I	25	5	2212.11	Os	—	6
2219.652	V I	2	—	2216.009	W II	10	15	2211.96	Os	40	5
2219.62	Cr	—	12	2215.786	V	—	9	2211.87	Yb	—	2
2219.53	Ni	—	8 h	2215.76	Au	—	15	2211.86	Hf II	5	6
2219.41	Ta	6	12	2215.741	Ir I	8	—	2211.83	Cr II	3	18
2219.400	V	—	2	2215.654	Cu I	30	—	2211.753	Ga	2	—
2219.35	W	—	5	2215.60	Ta	10	25	2211.750	Si I	12	12
2219.336	Cb	3	4	2215.59	Xe	—	[2] Dj	2211.735	Zr	8	—
2219.29	Re	15	4	2215.55	Re	12	4	2211.71	Kr II	—	[5] Me
2219.28	U	15	2	2215.53	Cb	4	—	2211.64	Os	5	—
2219.22	Au	—	3 h	2215.52	Mo	—	3	2211.59	Re	9	3
2219.21	Ir	2	20	2215.383	Pt II	—	9	2211.51	Os	5	4 w
2219.169	Cb	3	2	2215.38	U	—	3 h	2211.510	Pt II	—	3 w
2219.154	Co I	9	4	2215.37	Os	20	5	2211.46	Cb	12	2
2219.00	Re	15	7	2215.342	W	6	15 w	2211.430	Co II	9	18
2218.917	Si I	3	—	2215.29	Cb	2	4	2211.364	V I	2	2 h
2218.87	A	—	[60] Rt	2215.27	Pr	—	18	2211.290	Ni I	12	—
2218.813	Co	10	—	2215.21	Mn	—	6	2211.267	Cb	—	3
2218.739	Ir I	8	2	2215.2	A	—	[2] Rt	2211.25	Ir	2 wh	4
2218.71	Re	15	7	2215.100	Cu II	—	15	2211.234	Fe I	6	—
2218.70	O II	—	[5] Mh	2214.92	Sn	—	3	2211.21	Re	12	7
2218.62	Cu	2 r	15	2214.80	W	10	20	2211.21	Ag	—	3

2211.1—2200.2 A.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities					
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
2211.15	Cd	—	[2]		Tk	2207.74	Ni I	4	—			2203.91	Cr	—	—		
2211.137	In I	3	—		Ps	2207.71	Re	20	4	a	—	2203.91	Os	25	5	—	a
2211.101	Fe II	—	12	—		2207.697	Co I	10	—			2203.882	Pt II	—	20	—	
2211.10	Ni II	—	8	—		2207.64	Lu	—	2 h	Me	—	2203.85	Hf II	3	3	—	Me
2211.07	Co	—	5	—		2207.63	V	—	35	—		2203.79	W II	3	10	—	
2211.03	W	—	5	—		2207.58	Ti	—	2	Sd	—	2203.75	Os	5	—	—	a
2211.02	Ni I	8	12	—		2207.570	Pt II	—	2	Sh	—	2203.72	N II	—	[3]	—	Fl
2211.00	Mo	—	15	—		2207.48	Os	15	4	a	—	2203.68	Ir	—	25	—	
2210.923	Cb	5	10	—		2207.47	Pd II	4	35	—		2203.662	Ag II	—	20 h	—	
2210.912	Si I	30	30	Fl		2207.44	Ni	—	3 h	—		2203.66	Sb	4	2	—	
2210.896	Zr	15	—	—		2207.39	W	3	—	—		2203.660	V I	2	—	—	
2210.89	Rh	15	2	a		2207.35	Mo	—	10	—		2203.630	Cb	15	40	—	
2210.88	Mn	8	8	a		2207.317	Ru	2	1	—		2203.56	Nd	—	30	—	
2210.88	Mo	4	—	—		2207.177	Cb	3	10	—		2203.55	Rh	15	50 w	a	
2210.87	Zn II	—	50	—		2207.17	Te	50	—	Kh	—	2203.52	Ni	—	8 h	—	
2210.82	Hf II	2	2 h	Me		2207.14	Ta	10	10 s	—		2203.505	Pb II	50 w	5000 R	—	
2210.686	Fe I	8	—	IMe		2207.068	Fe I	6	—	IMe		2203.478	Pd II	—	25	—	
2210.66	Au II	—	4	—		2207.00	Ti I	30 R	3	—		2203.463	Fe	4	—	—	
2210.627	Cb	2	—	—		2206.96	Zr	—	2 h	—		2203.43	Co II	—	3	—	
2210.57	Pd	—	[2]	Bx		2206.94	W	3	10	—		2203.22	A	—	[2]	Rt	
2210.537	Cb	4	10	—		2206.88	Re	2 h	30	a		2203.18	Ce	—	20	a	
2210.53	Os	15	1	a		2206.84	Mo	—	18	—		2203.168	Cb	4	5	—	
2210.53	K II	—	[20]	MI		2206.82	Lu	—	5 h	Me		2203.13	Nd	—	10	—	
2210.47	Zn II	—	[2]	Vs		2206.78	Re	4	2 h	a		2203.12	Bi	20 h	—	Om	
2210.46	Ti	—	2	Sd		2206.730	Pt II	—	20	—		2203.07	Yb	—	2	—	Me
2210.442	Cb	3	—	—		2206.70	Ni II	20	30 h	—		2202.99	Hf II	3	3 h	—	Me
2210.39	Ni II	12	18 w	—		2206.64	Rh	10	10	a		2202.98	Re	20	10	a	
2210.37	Cd II	—	[10]	Tk		2206.632	Cb	—	5	—		2202.957	Co II	3	30	—	
2210.32	Ag II	—	[5]	Bx		2206.59	Hf	2	2 h	Me		2202.83	Bi	12	8	—	
2210.31	Cb	—	2	Me		2206.589	W II	10	15	—		2202.77	A II	—	[2]	Rt	
2210.305	V	—	20	Me		2206.572	Fe II	—	6	—		2202.724	V I	10	—	Me	
2210.26	Ti	—	2	—		2206.53	Ta	2	15	a		2202.71	Rh	—	12	a	
2210.259	Cu II	20	40	IBu		2206.450	Mo	3	18	—		2202.68	Mg II	5	—	Fl	
2210.22	W	—	3	—		2206.44	V	—	8	—		2202.582	Pt II	—	12 w	—	
2210.19	Ta	—	12	—		2206.35	Rh	—	80	—		2202.50	V	—	60	—	
2210.046	Al I	12 R	15	Gn		2206.32	Pd	—	[4]	Bx		2202.49	Os	25	5	a	
2210.033	V	—	15	—		2206.31	Zr II	—	3 h	—		2202.355	Pd II	—	40	—	
2210.03	Ta	10	12	a		2206.27	Os	25	50	—		2202.25	Cl	—	[12]	An	
2209.97	V	5 wh	8	—		2206.19	Co II	4	—	—		2202.240	In I	2	—	Ps	
2209.9	bh C	2	—	L		2206.16	Re	3	12	a		2202.22	Pt I	25	8	—	
2209.85	Mo	2	7	—		2206.11	Hf II	10	10 h	Me		2202.10	Ag II	—	50 wh	—	
2209.848	Pt II	—	15	Sh		2206.10	N II	—	[15]	Fl		2202.05	Xe	—	[2]	Dj	
2209.81	Re	15	7	a		2206.08	W	6	10	—		2202.03	Re	7	—	a	
2209.795	Cu II	—	10	Sh		2206.06	Rh	10	5	—		2202.007	Cb	3	5	Me	
2209.70	Cd	—	3 h	—		2206.06	Mo	—	7	—		2202.011	Pt II	2	20	—	
2209.66	Sn II	25 w	60 r	—		2206.010	Cb	—	25 w	—		2201.97	W	2 h	10	—	
2209.64	Mn	7	2 h	a		2205.97	As I	8	—	Me		2201.93	Os	25	3	a	
2209.56	Mo	2	15	—		2205.95	Ag II	—	50 wh	m		2201.89	Rh	—	9	a	
2209.51	Co	—	10	—		2205.93	U	—	5	—		2201.75	Rh	2	4	a	
2209.50	Os	5	10	a		2205.91	Ga	—	3	Kl		2201.70	Re	7	7	a	
2209.45	Te	—	[5]	Lc		2205.89	Au II	—	10	—		2201.67	V	—	50	—	
2209.219	V	—	50	—		2205.874	Co I	6	8	—		2201.67	Hf II	3	3	Me	
2209.074	Ru	10	—	—		2205.74	Os	20	50	—		2201.649	Zr I	6	—	—	
2209.07	Mo	—	4	—		2205.71	V	—	2	—		2201.56	Ni I	7 h	—	—	
2209.06	W	6	2 h	—		2205.68	Ir	25	5	—		2201.51	Cd	—	[2]	Tk	
2209.05	Co	—	2	—		2205.53	Co II	—	15	—		2201.41	Ni II	10	30	—	
2209.02	Ta	—	18	a		2205.50	Pr	—	15	—		2201.408	Fe	—	2	Do	
2208.99	Ni	5	—	—		2205.49	W	—	6	—		2201.40	Sb	40	25	m	
2208.96	Ir	2	50	—		2205.43	Re	4	8	a		2201.370	Cb	—	8	—	
2208.934	V	—	40	—		2205.41	Pd II	—	[25]	Bx		2201.35	Au	—	30	—	
2208.9	A	—	[10]	Rt		2205.28	In II	—	[25]	Ps		2201.35	Ti II	—	2	—	
2208.83	Te I	200	[2]	Bl		2205.17	Os	15	—	a		2201.289	Pt II	—	6	Sh	
2208.81	Fe	6 w	—	—		2205.16	As I	5	—	Me		2201.235	Co I	4	—	—	
2208.77	Pt	5	—	—		2205.122	Ir I	10	—	Ab		2201.19	Yb	—	3	Me	
2208.72	Ir	—	40	—		2205.07	Co II	—	15	—		2201.16	Ta	6	25	—	
2208.71	Cr	—	20	—		2205.02	Rh	—	100	—		2201.117	Fe I	10	—	IMe	
2208.67	Ni I	3	—	—		2204.961	Ir	5	300	—		2201.08	Al	5 R	—	Hr	
2208.606	Ca II	20	50	Cw		2204.935	V I	3	—	—		2201.02	Rh	—	30	—	
2208.60	Nd	—	20	—		2204.87	Mo	—	10	—		2201.01	Pt	20	9	—	
2208.53	Sb	25	20	Sp		2204.85	Os	2	40	—		2200.96	Mo	3	15	—	
2208.522	Co I	12	—	—		2204.80	Pd	—	[2]	Bx		2200.92	W	—	8	—	
2208.496	Ag II	—	25 wh	—		2204.796	Co I	18	2	—		2200.89	K	—	[5]	MI	
2208.46	Os	12	2	a		2204.627	Al	10 R	10	Gn		2200.80	Os	10	12	a	
2208.27	Xe	—	[3]	Dj		2204.613	Cb	5	—	—		2200.722	Fe I	35	8	I	
2208.27	Os	10	15	—		2204.60	Lu	—	2 h	Me		2200.720	Ca I	20	—	—	
2208.18	Mo	—	10	—		2204.57	Re	15 w	—	a		2200.70	Ni I	10	2	—	
2208.088	Ir	40	3 wh	Ab		2204.55	Pd	—	[4]	Bx		2200.693	Co	80	—	—	
2208.010	Fe	5	—	—		2204.495	V	—	40	—		2200.60	Mo	—	3	—	
2207.99	W	6	10	—		2204.48	W II	12	30	—		2200.57	Cu II	—	10	—	
2207.980	Si I	18	15	Fl		2204.40	Ag II	—	10 h	—		2200.46	Ta	3	2 h	a	
2207.959	Zr	10	—	—		2204.18	Cd II	—	[2]	Tk		2200.420	Co II	5	15	—	
2207.92	Co II	—	30	—		2204.12	I	—	[20]	Lc		2200.39	Fe I	50 R	100	—	
2207.92	Co I	9	—	—		2204.10	Ta	3	15	a		2200.31	Lu	—	6	Me	
2207.87	Se	—	[10]	Bl		2204.08	Fe	2	—	—		2200.28	Ru	8	—	a	
2207.80	Sb	4 h	3 h	—		2204.02	W	3	10	—		2200.27	W	—	3	—	

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities				
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R	
2200.25	Mo	2 h	7	-	-	2196.29	Ta	-	6	-	-	2192.22	Ir	-	-	25 w	-	
2200.174	V I	5	-	-	Me	2196.07	Te	5	-	-	Kh	2192.22	Si	-	-	[10]	Sy	
2200.09	Pd	-	[2]	-	Bx	2196.039	Fe I	80 R	30	I	-	2192.12	Ni	-	-	6 h	-	
2199.961	Cb	4	15	-	-	2196.03	Ta	25 I	35	-	-	2192.099	W	-	-	6	-	
2199.96	Rh	-	50	-	-	2195.835	Pt	-	15	-	-	2191.92	Pd II	-	-	[3]	Bx	
2199.84	Hf	4	4 h	Me	2195.83	La II	2 h	4	-	-	-	2191.91	Kr	-	-	[2]	Me	
2199.81	Cd	-	[2]	-	BI	2195.82	Cb	3	-	-	-	2191.86	Ag	-	-	10	-	
2199.752	Cu I	20 R	5 h	IBu	2195.82	W	2 h	10	-	-	-	2191.838	Fe I	100 R	12	-	-	
2199.75	Fe	4	-	-	-	2195.78	Cb	-	8	-	-	2191.79	Hf II	10	15	-	Me	
2199.740	Co	20	-	m	2195.77	Cu II	-	30	-	-	-	2191.66	V I	3	-	-	-	
2199.70	Pt	15	18	-	-	2195.744	Ir I	25	-	-	Ab	2191.64	Cr	30	5	-	-	
2199.67	Ta	25	25	-	-	2195.73	Ru	12	-	-	a	2191.62	Cr	2 h	15	-	-	
2199.594	Cb	3	4	-	-	2195.72	Cb	-	2	-	-	2191.56	Ni I	2	-	-	-	
2199.583	Cu I	50 R	20	IBu	2195.70	O II	-	-	[5]	Fl	2191.49	Re	30	2 h	a	-	-	
2199.573	Fe	10	-	-	-	2195.69	V	-	10	-	-	2191.45	Mo	-	5	-	-	
2199.57	Hf II	8	8 h	Me	2195.67	In II	-	-	[2]	Ps	2191.44	O II	-	-	[5]	Mh		
2199.569	Al	5	-	Gn	2195.665	Ga	2	3	-	Uh	2191.39	S	-	-	[15]	Lc		
2199.440	V	-	4	-	-	2195.653	Cb	-	5 w	-	-	2191.39	Mn	25	10	a	-	
2199.43	Os	15	5	a	-	2195.62	Rh	1	10	a	-	2191.37	C	-	6	Fl	-	
2199.40	Hf II	7	8	Me	2195.54	Lu	30	100	Me	-	2191.37	Lu	6	60	Me	-	-	
2199.40	W	-	3	-	-	2195.51	Pd I	10	-	-	-	2191.351	Ir I	12	5	-	-	
2199.34	Sn	30	60 R	-	-	2195.502	Al II	-	-	[2]	Sy	2191.35	W	-	8	-	-	
2199.27	Ti	-	2	-	-	2195.48	Hg	-	-	[2]	Dj	2191.27	Hf	5	5 h	Me	-	
2199.17	Kr	-	[2]	Me	2195.43	O II	-	-	[5]	Mh	2191.24	Er	-	200 W	a	-	-	
2199.15	W II	3	2	-	-	2195.35	Cd	-	15	-	-	2191.202	Fe I	10	2	-	I	
2199.05	Cb	-	3	-	-	2195.28	Re	2 h	18	a	-	2191.19	Ni I	15	-	-	-	
2198.94	Re	40	10	a	-	2195.25	Mo	-	7	-	-	2191.10	V I	4	4	-	-	
2198.854	Ir	50	15	Ab	-	2195.22	Rh	1 w	5	a	-	2190.969	Ni II	-	10	-	-	
2198.80	S	-	[8]	Lc	2195.10	V	-	2	Me	-	2190.96	Sb II	-	5	Sp	-	-	
2198.764	Co I	2	-	-	-	2195.0	bh C	20	-	L	2190.95	W	-	3	-	-	-	
2198.701	Ge	10 R	2 h	-	-	2194.95	W	-	6	-	-	2190.92	Rh	-	30	-	-	
2198.67	W II	6	12	-	-	2194.95	Mo	-	8	-	-	2190.835	In I	2	-	Pa	-	
2198.64	Re	8	2 h	a	-	2194.93	Cr	8	-	a	-	2190.786	W	-	2	-	-	
2198.58	U	2	5	a	-	2194.85	Mn	-	12	a	-	2190.772	Fe	20	2	-	-	
2198.525	V	-	12	-	-	2194.84	V	-	8	-	-	2190.77	Lu	-	4	Me	-	
2198.37	W	10	3	-	-	2194.80	Lu	-	7	Me	-	2190.77	Pt	8	-	-	-	
2198.34	As I	3	-	Me	2194.79	U	2	15	-	-	2190.74	Hg II	-	-	[15]	Dj	-	
2198.31	Cb	-	3 w	-	-	2194.64	V I	5	-	-	2190.665	Co II	2	18	-	-	-	
2198.300	Co II	3	10	-	-	2194.63	Cd	5	100 h	-	2190.66	O II	-	-	[5]	Fl	-	
2198.29	Rb	-	[5]	Fa	2194.612	Co	6	-	-	-	2190.63	Cd	-	-	[3]	Tk	-	
2198.240	Pd II	-	40	-	-	2194.56	Pd II	-	3 h	Sh	2190.59	Ta	10	-	-	a	-	
2198.16	Os	10	5	a	-	2194.52	W	10	15	-	2190.57	Ni	-	8 h	-	-	-	
2198.14	Yb	-	20 h	Me	2194.49	Sn	30 R	60	-	-	2190.55	Re	25	5	a	-	-	
2198.14	Mo	2	20	-	-	2194.42	Ru	12	-	a	2190.55	Pd II	-	4	Bx	-	-	
2198.02	W II	3	3	-	-	2194.39	Os	40	100	-	2190.50	Cu II	-	2 h	-	-	-	
2198.01	Rb	-	[5]	Fa	2194.27	Ir	-	40	-	-	2190.47	V	-	8	-	-	-	
2198.00	V	-	40	-	-	2194.251	Al II	-	[3]	Sy	2190.45	Pd II	-	-	[7]	Bx	-	
2197.90	Lu	-	2	Me	2194.24	Pr	-	10	-	-	2190.43	Mo	-	10	-	-	-	
2197.893	Pt II	-	25	-	-	2194.11	Os	10	-	a	2190.42	O II	-	-	[10]	Mh	-	
2197.85	W	-	4	-	-	2193.91	Pd II	-	10	-	-	2190.38	Ir	-	150	-	-	-
2197.83	Xe	-	[3]	Dj	2193.89	Nd	-	25	-	-	2190.315	Pt II	7	35	Sh	-	-	
2197.8	Ra II	-	[4]	Rs	2193.88	Ta	15	40	-	-	2190.23	Mo	30	6	a	-	-	
2197.791	Ca II	20	40	Cw	2193.86	Re	6	-	a	-	2190.23	Ni I	20	3	-	-	-	
2197.633	Co	5	-	-	2193.83	V I	3	5	-	-	2190.226	Co	3	-	-	-	-	
2197.58	N II	-	[8]	Fl	2193.803	Cb	5	2	-	-	2190.22	V	2	15	-	-	-	
2197.56	A	-	[10]	Rt	2193.60	Co II	4	30	-	-	2190.22	Hf II	30	30	Me	-	-	
2197.509	W II	3	5	-	-	2193.564	Fe	2	-	-	2190.17	Pt I	20	-	-	-	-	
2197.50	Ir	5	100	-	-	2193.54	Re	6	7	a	2190.14	Ti II	2	15	-	-	-	
2197.47	Mo	5	30	-	-	2193.53	W II	-	8 wh	-	2190.14	Lu	-	6	Me	-	-	
2197.46	Re	12	7	a	-	2193.47	Pd	-	[4]	Bx	2190.006	Mo	3	10	-	-	-	
2197.41	Pd	-	20	-	-	2193.46	V	4	-	-	2190.0	K II	-	-	[40]	MI	-	
2197.407	In I	2	1	Ps	2193.411	Fe	8	-	-	-	2189.94	V I	5	-	-	-	-	
2197.35	Ni I	20	-	-	2193.40	Yb	-	4 d	Me	-	2189.89	Re	15	4	a	-	-	
2197.26	Mo	3	10	-	-	2193.32	Os	9	2	a	2189.88	Pr	-	5	a	-	-	
2197.25	Kr	-	[2]	Me	2193.26	Pd II	-	15	-	-	2189.85	W	6	12	-	-	-	
2197.230	Fe I	2	-	-	-	2193.20	Ta	6	18	-	2189.74	Mo	-	4	-	-	-	
2197.14	Pd II	-	7	-	-	2193.18	Nd	-	20	-	2189.63	V I	-	2	-	-	-	
2197.08	W	8	3	a	-	2193.12	S	-	[15]	Lc	2189.621	Cu II	12	40	IBu	-	-	
2196.98	Lu	-	4	Me	2193.08	Yb	-	2	Me	-	2189.62	Si	-	-	[5]	Sy	-	
2196.97	Mo	-	5	-	-	2193.03	W	10	12	-	2189.586	Bi I	25 h	5 h	Om	-	-	
2196.916	Pt I	15	3	-	-	2193.009	Cb	5	-	-	2189.54	Os	10	-	a	-	-	
2196.904	Co	3	-	-	-	2192.91	V	-	10 w	-	2189.51	W II	8	-	-	-	-	
2196.9	bh C	30	-	L	2192.863	Zr I	3	-	-	-	2189.42	Mo	4	30	-	-	-	
2196.84	Cb	2	-	-	2192.858	Ru	3	-	-	-	2189.42	Yb	-	8	Me	-	-	
2196.78	W	3	6	-	2192.842	Pt II	-	12	-	-	2189.38	Fe I	4	-	-	-	-	
2196.7	K	-	[10]	Sy	2192.82	Fe	5	-	-	-	2189.36	Cu II	-	2	Sh	-	-	
2196.56	V I	2	-	Me	2192.76	Zr	-	2	-	-	2189.353	W II	5	5	-	-	-	
2196.54	Lu	-	2	Me	2192.607	Al II	-	-	[6]	Sy	2189.350	Co I	3	-	-	-	-	
2196.49	Os	8	-	a	2192.50	Pt	6	4	-	-	2189.29	S	-	-	[15]	Lc	-	
2196.462	Co I	15	4	-	-	2192.49	Co II	2	25	-	2189.2	bh C	5	-	-	-	-	
2196.44	Ir	5	50	-	-	2192.45	Re	12	-	a	2189.20	O II	-	-	[5]	Mh	-	
2196.40	V I	5	2 wh	Me	2192.417	Cb	2	3	-	-	2189.197	W	4	4	-	-	-	
2196.40	Cb	-	20	-	-	2192.40	W	3	3	-	2189.18	Fe	6	-	-	-	-	
2196.30	V I	3	-	-	-	2192.359	Ni II	-	8 h	-	2189.032	Fe II	1	20	-	-	-	
2196.29	Pd II	-	3	-	-	2192.260	Cu II	25	500 h	IBu	2189.00	Co II	3	10	-	-	-	

2188.9—2177.2 Å.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2188.98	Au II	—	15	—	2184.95	Hf II	6	6 h	Me	2181.39	Cd	—	[2]	Bl
2188.97	Os	50	—	a	2184.950	Co I	10	—	—	2181.37	Mo	2 wh	20	—
2188.95	Mo	4	15	—	2184.89	Mo	—	12	—	2181.14	Fe I	2	—	—
2188.942	Cb	5	—	—	2184.89	V	—	3	—	2181.121	Co I	12	2	—
2188.88	Ni	—	4	—	2184.88	Mn	8	30	a	2181.04	Re	10	4 wh	a
2188.87	Hf	5	6 h	Me	2184.80	Lu	—	6	Me	2180.945	W	—	—	—
2188.84	Cd	—	[2]	Bl	2184.795	Zr II	2	4 h	—	2180.87	Hg	—	[2]	Dj
2188.754	Ru	3	1	—	2184.78	Yb	—	2	Me	2180.866	Fe I	8	—	IMe
2188.642	W	—	2	—	2184.68	Os	25	15	a	2180.86	Pd II	—	5	—
2188.64	Mo	—	7	—	2184.66	Ir	—	15	—	2180.79	Lu	—	—	Me
2188.58	Re	7	—	a	2184.62	Nd	—	20	—	2180.75	Cu II	3	[10]	—
2188.55	Cd II	—	[50]	Tk	2184.606	Ni II	15	20 h	—	2180.688	W II	10	4	—
2188.51	Re	7	—	a	2184.55	Re	6	10	a	2180.67	Pd II	—	7	—
2188.48	Ta	3	35	—	2184.53	V I	2	—	Me	2180.67	Ce	—	100	—
2188.367	W	—	5	—	2184.46	Fe	4	—	—	2180.667	Cb	—	10 w	—
2188.345	Pt	3	2	—	2184.39	V	—	3 h	—	2180.6	Rb	—	[2]	Fa
2188.25	Yb	—	5	Me	2184.35	Mo	2	20	—	2180.60	Co II	—	6	—
2188.23	Re	—	10	a	2184.34	Pd	—	[2]	Bx	2180.59	Ir	3	—	—
2188.16	Tm	5	4	Me	2184.314	Co	8	—	—	2180.49	Pt I	25	12	—
2188.141	Cb	—	8 w	—	2184.31	Hf II	6	8	Me	2180.475	W	5	10	—
2188.06	Os	12	5	a	2184.235	W	12	8	—	2180.470	Ni II	4	40	—
2188.05	V I	3	3 wh	—	2184.18	V	—	2	—	2180.311	Pt	150	15	—
2188.049	Ni II	4	25	—	2184.179	W	4	6	—	2180.26	Fe	2	—	—
2188.03	Mo	—	18	—	2184.14	Os	25	6	a	2180.25	Mo	—	15	—
2188.02	Re	12	—	a	2184.140	Pt II	—	3	Sh	2180.24	Yb	—	7 h	Me
2188.02	S	—	[15]	Lc	2184.113	Au II	—	10	—	2180.22	Hf	2	2 h	Me
2187.95	V I	2	—	—	2183.979	Fe	20	—	IMe	2180.065	Co I	10	—	—
2187.876	Fe II	—	7	—	2183.94	Os	10	5	a	2180.03	Mo	—	8	—
2187.87	La II	3	40	—	2183.904	Ni I	10	—	—	2179.992	Ni II	—	12	—
2187.85	Pb	50	3	—	2183.90	Tm	—	10	Me	2179.90	In I	2 R	—	Ps
2187.83	W II	—	3	—	2183.835	Fe	—	12	—	2179.631	W II	8	8	—
2187.80	Cd	—	5	m	2183.790	W	—	7	—	2179.60	Cs II	—	[15]	Rf
2187.76	Re	15	7	a	2183.74	Re	25	—	a	2179.54	Ta	6	20 l	a
2187.75	As I	3	—	Me	2183.7	A	—	[20]	Rt	2179.464	Ni II	4	8	—
2187.688	Fe II	—	12	—	2183.69	Os	20	6	a	2179.40	Pd II	—	9	—
2187.630	W	—	5	—	2183.61	Yb	—	3 h	Me	2179.399	Cu II	12	35	IBu
2187.62	Mo	—	8	—	2183.60	Mo	—	7	—	2179.37	Si	—	[5]	Sy
2187.600	Ni I	4	—	—	2183.47	Fe	6	—	—	2179.36	Mo	—	18	—
2187.580	Rh	—	50 l	—	2183.378	Ni	10	2 h	—	2179.350	Ni II	2	10	—
2187.51	Ti II	1	15	—	2183.315	W	3	10	—	2179.257	Sb	35	40	—
2187.45	Nd	—	15	—	2183.3	A II	—	[40]	Rt	2179.25	A II	—	[40]	Rt
2187.436	Fe II	—	8	—	2183.29	Yb	—	7	Me	2179.11	Re	15	4	a
2187.427	Ir I	20	20 w	Ab	2183.27	I	—	[30]	Lc	2178.98	Ir	10	50	—
2187.40	In I	2	1	Ps	2183.15	Hg	—	[2]	Dj	2178.96	Fe	8	—	—
2187.38	V I	3	—	—	2183.08	V	—	3	—	2178.952	Co	25	—	—
2187.34	A	—	[20]	Rt	2182.999	Ir	15	—	Ab	2178.95	Rh	12	30	a
2187.284	Co	5	—	—	2182.97	Tm	—	15	Me	2178.944	Cu I	30 r	12	IBu
2187.26	Pr	—	7	a	2182.94	As I	10	1	Me	2178.90	Hf II	60	80	Me
2187.22	Te	5	—	Kh	2182.90	Cu II	—	8	—	2178.86	Zr	2	2	Ks
2187.21	Ni	2	—	—	2182.83	Ir	—	25	—	2178.812	W	—	10	—
2187.191	Fe I	50 R	10	I	2182.80	Zr II	—	4 w	—	2178.80	Yb	—	8 h	Me
2187.04	Co II	2	7	—	2182.78	V	—	3 w	—	2178.79	Re	—	12	a
2187.033	Cb	—	4	—	2182.77	Pt I	20	12	—	2178.77	S	—	[8]	Lc
2186.99	Rh	—	25	a	2182.74	A II	—	[5 h]	Rt	2178.72	W	—	12	—
2186.95	Cd	—	[5]	Tk	2182.71	Ta	18	20 l	—	2178.68	Os	5	—	a
2186.94	Ni I	8	—	—	2182.64	O II	—	[15]	m	2178.59	Re	12	3	a
2186.93	V	—	10	—	2182.64	Cd II	—	[3]	Tk	2178.33	Nd	—	9	—
2186.93	K	—	[40]	MI	2182.587	Co I	15	—	—	2178.27	Pd I, II	15	3	—
2186.920	Bi II	—	30	—	2182.55	Yb	—	3 h	Me	2178.227	Cb	3	—	—
2186.890	Fe I	6	12	I	2182.535	Mo	—	15	—	2178.22	W II	—	2 h	—
2186.786	Co	12	5	—	2182.4	K	—	[2]	MI	2178.171	Ir I	25	5	—
2186.768	Ag II	10	100	—	2182.400	In I	2	1	Ps	2178.17	Os	8	—	a
2186.733	W II	8	15	—	2182.381	Co	2	—	—	2178.13	Te	10	—	Kh
2186.62	He II	—	[2]	Ps	2182.38	Fe	—	5 h	—	2178.090	Fe I	100 R	20	—
2186.485	Fe	50 R	80	—	2182.37	Ni I	15	3	—	2178.08	Cb	5	—	—
2186.443	Ge	2	—	—	2182.349	Ir	15	15	Ab	2178.03	Ta	15 s	35 s	a
2186.36	Nd	—	3	—	2182.344	Pd II	—	30	—	2178.02	Lu	—	8	Me
2186.241	Fe I	5	—	—	2182.22	V I	30	5	—	2177.92	K	—	[10]	MI
2186.030	Co	3	—	—	2182.2	Rb	—	[5]	Fa	2177.87	Re	3	15	a
2185.96	V	—	40	—	2182.096	W	—	6	—	2177.86	Mo	—	4	—
2185.93	Tm	2	20	Me	2182.01	Rh	—	25	a	2177.8	Ca I	2	—	Sd
2185.872	Cb	1	5	Me	2182.00	Co	—	10	—	2177.79	Kr	—	[2 h]	Me
2185.757	W	3	12	—	2181.98	Mo	—	6	—	2177.7	Hf	—	—	Md
2185.71	Er	30	—	a	2181.98	V I	5	—	—	2177.7	In	2	—	Uh
2185.69	Yb	60	100	Me	2181.94	Hf	3	3 h	Me	2177.61	Cs II	—	[2]	Rf
2185.54	Au II	—	10	—	2181.88	W	—	5	—	2177.59	Re	4 wh	12	a
2185.52	Kr	—	[4]	Me	2181.85	Yb	—	2	Me	2177.547	W II	4	12	—
2185.498	Ni II	4	30	—	2181.81	Re	5	30	a	2177.51	Mo	—	7	—
2185.42	Lu	—	2	Me	2181.72	Cu I	50 r	15	—	2177.50	Yb	—	5	Me
2185.413	W	—	10	—	2181.719	Co II	80	8	—	2177.360	Ni II	3	20	—
2185.398	Cb	2	3 l	Me	2181.66	Pb II	6	—	—	2177.3	Ra II	—	[12]	Ra
2185.38	V	4	50	—	2181.51	Yb	—	2	Me	2177.30	Si I	8 W	—	Ks
2185.21	Fe	3	—	—	2181.50	Os	25	5	a	2177.25	Cb	1	2 W	—
2185.19	Re	10	3	a	2181.48	Zr	2	—	—	2177.24	V I	5	10	—
2184.95	W	—	3 wh	—	2181.41	Cu II	—	[4]	Sh	2177.210	Bi I	15	—	—

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2177.13	Rh	3	25	1	a	2173.173	Co	10	—	—	—	2168.805	Al I	8 R	12	—	Gn
2177.12	W II	3	3 wh	—	—	2173.15	V I	5	—	—	—	2168.78	Re	10	—	—	a
2177.10	Os	10	4	—	a	2173.04	Ta	2	4	a	—	2168.75	Mo	—	12	—	a
2177.088	Ni II	3	20	—	—	2172.975	Fe II	3	10	—	—	2168.75	Rh	4	3 w	—	a
2177.04	A	—	[20]	—	Rt	2172.96	Hf II	5	5 h	Me	—	2168.711	Co I	18	2	—	—
2177.037	Fe II	—	8	—	—	2172.93	I	—	[12]	Lc	—	2168.61	Ti I	30 R	—	—	Fl
2177.02	V I	20	4	—	—	2172.917	Mo	5	20	—	—	2168.591	W	2 h	8	—	—
2176.968	Co	2	—	—	—	2172.911	Pd I	12	4	—	—	2168.44	Re	12	15	—	a
2176.93	Lu	—	4	—	Me	2172.89	W	—	8 w	—	—	2168.38	Fe	8	3	—	—
2176.9	Ga	—	6	—	Kl	2172.89	Co II	—	3	—	—	2168.298	W	10	8	—	—
2176.90	Pd II	—	25	—	—	2172.84	Os	15	20	a	—	2168.293	Mo	—	12	—	—
2176.88	Cd II	—	[3]	—	Tk	2172.77	Xe	—	[2]	Dj	—	2168.09	V II	—	4	—	—
2176.874	W	4	10	—	—	2172.75	V	4	—	—	—	2168.09	Yb	—	3	—	Me
2176.872	Pt II	3	25	—	Sh	2172.581	Fe I	4	—	IMe	—	2168.05	Fe	8	—	—	—
2176.837	Fe I	8	—	—	IMe	2172.58	Yb	—	2	Me	—	2167.96	Re	40	12	—	a
2176.762	Cb	8	30	—	—	2172.51	Cu	—	5	—	—	2167.879	Fe II	—	10	—	—
2176.67	Os	15	3	—	a	2172.46	Mo	—	8	—	—	2167.78	Zr	—	2	—	Ks
2176.618	Bi I	20	4	—	Om	2172.388	Pt	2	25	Sh	—	2167.75	Os	50	10	—	a
2176.516	Fe	—	8	—	—	2172.383	Pd II	—	20	—	—	2167.74	Si I	7	—	—	Ks
2176.494	Co	4	—	—	—	2172.31	Os	5	20	a	—	2167.687	W	—	4	—	—
2176.47	Nd	—	15	—	—	2172.21	Ir	30	20	—	—	2167.68	V II	—	4	—	—
2176.46	Pt I	10	2	—	—	2172.195	W	—	8	—	—	2167.65	Mo	—	12 l	—	—
2176.419	W	2	12	—	—	2172.175	Co I	4	—	—	—	2167.400	Fe	3	6	—	—
2176.40	Fe	2	—	—	—	2172.143	Fe I	3	—	—	—	2167.322	Rh	—	80	—	—
2176.33	Au I	15	—	—	MI	2172.13	Yb	—	3	Me	—	2167.238	Cb	4	20	—	—
2176.26	As I	8	—	—	Me	2172.07	Ta	4	12 l	a	—	2167.19	W II	3	8	—	—
2176.23	Re	40	8	—	a	2172.0	Rb	—	[2]	Fa	—	2167.122	Mo	—	10	—	—
2176.22	Xe	—	[2]	—	Dj	2171.9	Ga	2	—	Uh	—	2167.09	Os	10	2	—	a
2176.03	Fe	3	—	—	—	2171.89	Hf II	6	6 h	Me	—	2166.90	Os	20	10	—	a
2175.890	Sb I	300	40	—	—	2171.846	V	—	12	—	—	2166.88	Te	100	—	—	Kh
2175.843	Cb	5	25	—	—	2171.77	Rh	3	—	a	—	2166.87	Cu II	—	2	—	—
2175.835	V	2	5	—	—	2171.768	W	3	8	—	—	2166.773	Fe I	100 R	35	—	—
2175.83	Re	25	5	a	—	2171.76	Cu I	30	—	—	—	2166.764	Co I	5	—	—	—
2175.82	Zr II	—	3 w	—	—	2171.698	Ag II	—	10	—	—	2166.63	Pt I	25	15	—	—
2175.579	Pb	40 w	—	—	—	2171.65	Os	20	5	a	—	2166.506	Ag II	5	100 w	—	—
2175.56	Mn	—	40	a	—	2171.539	W	—	6	—	—	2166.5	Hf	—	2	—	Md
2175.551	Cb	5	—	—	—	2171.41	A II	—	[60]	Rt	—	2166.48	Ir	—	3	—	—
2175.51	W II	6	3	—	—	2171.292	Fe I	10	3	Bu	—	2166.47	Os	10	2	—	a
2175.447	Fe I	8	25	Do	—	2171.09	Mo	—	3	—	—	2166.36	Pd	—	[3]	—	Bx
2175.40	Mo	—	5	—	—	2171.07	Hg II	—	2	Nu	—	2166.319	W II	10	30	—	—
2175.40	Hg	—	[2]	Dj	—	2171.03	K	—	[5]	MI	—	2166.31	Os	8	2	—	a
2175.38	Yb	—	3 h	Me	—	2171.0	In	2	—	Uh	—	2166.28	Mo II	2	—	—	Fl
2175.36	Hf II	25	30	Me	—	2170.862	Ag II	—	30 h	—	—	2166.27	S	—	[8]	—	Lc
2175.36	Re	10	3	a	—	2170.84	Re	6	12	a	—	2166.24	Hg	—	[2]	—	Dj
2175.360	W	—	8	—	—	2170.83	Kr	—	[2]	Me	—	2166.22	Fe	4	—	—	—
2175.245	Ir I	30	4	—	—	2170.8	A II	—	[2]	Rt	—	2166.21	As	—	8	—	Ro
2175.156	Ni II	15	25	—	—	2170.76	V I	25	2	—	—	2166.18	V	—	10	—	—
2175.12	K	—	[10]	MI	—	2170.72	Pt	9	4	—	—	2166.156	Ni I	10	—	—	—
2175.069	Be I	25	3	Ps	—	2170.69	Cb	4	4	—	—	2166.05	Os	20	2 wh	—	a
2175.014	Ir	—	50	—	—	2170.57	Mo	—	20	—	—	2166.048	Ag II	—	8	—	—
2174.968	Cu II	3	40	Sh	—	2170.565	Co I	10	—	—	—	2165.96	Sr II	25 R	15	—	—
2174.942	Be I	10	—	Ps	—	2170.54	Fe	10	—	—	—	2165.949	Pt II	2	25	—	Sh
2174.93	Co II	—	2	—	—	2170.48	S	—	[8]	Lc	—	2165.860	Fe	20 h	1 h	—	I
2174.862	Fe II	—	8	—	—	2170.38	V	—	4	—	—	2165.80	Mo	—	18	—	—
2174.822	W	—	8	—	—	2170.37	Re	25	5	a	—	2165.559	Ni II	20	40 R	—	—
2174.77	Xe	—	[2]	Dj	—	2170.23	Sb	2	8	Sp	—	2165.54	Co	2	10	—	a
2174.686	Fe	—	3	—	—	2170.22	Hf II	20	30	Me	—	2165.53	Yb	—	3	—	Me
2174.67	Pt I	30	30	—	—	2170.07	V II	—	2 wh	—	—	2165.52	As I	50 r	3	—	Me
2174.669	Ni II	12	30	—	—	2170.06	Ni	—	4	—	—	2165.46	Re	3	18	—	a
2174.66	Pd	4	—	—	—	2170.046	Ir	10	3	Ab	—	2165.458	Pd II	—	15	—	MI
2174.605	Co I	30 r	12	—	—	2170.00	Er	8	—	a	—	2165.32	O	—	[10]	—	Mh
2174.54	Co II	15	25	—	—	2169.994	Pb I	1000 R	1000 R	Hf	—	2165.29	Pd II	3	15	—	—
2174.472	Ni I	10	—	—	—	2169.946	Fe	8	—	—	—	2165.27	W	—	7	—	—
2174.47	W	—	6	—	—	2169.941	W II	10	12	—	—	2165.24	Zr II	—	3 w	—	Ks
2174.28	Yb	4	10	Me	—	2169.9	Ra II	—	[125]	Rs	—	2165.19	Os	40	5	—	a
2174.24	Os	10	—	a	—	2169.895	Cb	—	5	—	—	2165.19	Yb	—	8 h	—	Me
2174.14	C II	—	2	—	Fl	2169.846	V	3	—	—	—	2165.18	Pd II	—	25	—	—
2174.14	Fe	4	—	—	—	2169.81	Os	5	1	a	—	2165.17	Pt I	1000 R	25	—	—
2174.08	Mo	—	8	—	—	2169.77	Yb	—	5	Me	—	2165.17	Mo	—	25	—	—
2174.03	Co	—	10	—	—	2169.76	Ir	—	3	—	—	2165.09	Cu I	60 R	25	—	—
2174.028	Al I	8 R	10	Gn	—	2169.69	U	2	6	a	—	2165.01	Ta	8	20	—	a
2173.86	C II	—	6	—	Fl	2169.61	Ni	—	2 h	—	—	2164.90	V	3	—	—	—
2173.845	Co I	10	—	—	—	2169.59	I	—	[100]	Lc	—	2164.85	Os	25	50	—	—
2173.83	Os	10	5 wh	a	—	2169.57	Re	—	8	a	—	2164.812	W	—	2	—	—
2173.822	W II	3	9	—	—	2169.563	Pt II	—	12	—	—	2164.8	Hf	—	2	—	Md
2173.71	Fe	2	2	—	—	2169.55	V	—	3 h	—	—	2164.6	Rb	—	[5]	—	Fa
2173.606	Zr	4	—	—	—	2169.53	Cu I	30	—	—	—	2164.547	Fe I	2 h	2 h	—	IMe
2173.547	Ni I	15	—	—	—	2169.53	Os	10	—	a	—	2164.49	Os	25	3	—	—
2173.543	W II	10	16	—	—	2169.51	Mo	—	12	—	—	2164.43	W	—	5	—	—
2173.49	Os	10	12	a	—	2169.48	W	15	5	a	—	2164.39	Fe	8	—	—	—
2173.44	Hf II	15	20	Me	—	2169.48	Pr	—	2 h	—	—	2164.38	Kr	—	[4 h]	—	Me
2173.4	bh C	30	—	L	—	2169.42	Ir	2	50	—	—	2164.33	Lu	—	15	—	Me
2173.34	Co II	2	18	—	—	2169.26	Pt	8	3	—	—	2164.325	Fe II	2	12	—	Do
2173.34	Yb	2	5	Me	—	2169.10	Yb	—	7	Me	—	2164.288	Pt	20	4	—	—
2173.211	Fe I	8	2	I	—	2169.100	Ni II	20	20	—	—	2164.27	Cb	—	2 w	—	—

2164.1—2149.6 Å.

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
2164.17	A	—	[100]	Rt	2158.95	Ag II	—	4 h	—	2154.203	Cb	5	12	—
2164.160	Se I	—	[100]	Rd	2158.920	Fe I	6	—	—	2154.188	Fe I	3	—	IMe
2164.098	Bi	20	2	Om	2158.79	Yb	—	4	Me	2154.18	Ir	15	5	—
2163.895	W	12	25	—	2158.76	Re	12	—	a	2154.16	Yb	—	80 h	Me
2163.87	Yb	—	10	Me	2158.739	Ni II	10	20	—	2154.081	P I	15	[25]	Ri
2163.860	Fe I	8	1	IMe	2158.61	U	—	20	a	2154.074	Co I	10	—	—
2163.78	Si I	10 w	—	Ks	2158.542	Co I	10	—	—	2154.02	Mo	—	6	—
2163.70	Ir	—	10	—	2158.53	Os	50	25	a	2154.02	Ir	10	2	a
2163.68	V	—	5 h	—	2158.48	Fe I	12	8	—	2153.97	Cr	—	2 h	—
2163.66	La	3	20 hl	Me	2158.41	Cu II	—	3	—	2153.94	U	2	6	a
2163.644	Mo	—	10	—	2158.4	In	—	2	—	2153.886	W	5	12	—
2163.60	C	—	30	Fl	2158.40	Ir	5	10	—	2153.65	Cb	—	2	—
2163.574	Co I	12	3	—	2158.312	Ni I	15 r	4	—	2153.63	Os	10	1	a
2163.366	Fe	12	—	I	2158.29	Ti II	3	10	—	2153.559	W	10	12	—
2163.314	Ir	20	10	—	2158.194	Rh	—	20	—	2153.55	Pt I	25	8	—
2163.31	K	—	[2]	MI	2158.18	Co II	—	2	—	2153.547	Cb	3	1	—
2163.178	Rh	—	50	—	2158.133	Cb	5	10	—	2153.532	Bi	40 wh	—	Om
2163.10	Re	20	2 h	a	2158.12	Hf	15	15 h	Me	2153.38	Pt	5	—	—
2163.072	Cb	3	5	—	2158.05	Ir	50	50	—	2153.36	Mo	—	10	—
2163.034	Co I	15	—	—	2158.04	Lu	—	2	Me	2153.32	Re	15	2	a
2162.94	Cd II	—	[3]	Tk	2158.04	Os	3	25	a	2153.30	Cb	—	3 w	—
2162.92	Ir	—	30	—	2157.96	Zr	1	2 w	—	2153.13	W II	—	8 w	—
2162.88	O	—	[25]	Mh	2157.87	Yb	—	3 h	Me	2153.004	Fe I	10	1	IMe
2162.88	Ir	25	1	—	2157.84	Os	30	4	a	2152.950	P I	12	[25]	Ri
2162.83	Re	10 w	3 h	a	2157.83	Ni I	12	2	—	2152.914	Bi	50 R	—	Om
2162.74	A	—	[60 h]	Rt	2157.792	Fe I	10	4	I	2152.89	Zr II	—	3 w	—
2162.69	Ti II	4	20	—	2157.51	Cb	—	2	—	2152.84	Sr II	15	15	—
2162.6	bh C	30	—	L	2157.425	W	—	8	—	2152.75	Pd II	—	30	—
2162.49	Cr	18	—	—	2157.278	Pt II	—	12	—	2152.68	Ir	50	200	—
2162.48	Hf II	15	15	Me	2157.27	Cb	—	5	—	2152.67	Pt	2	—	—
2162.362	W	—	7	—	2157.08	Os	25	3	a	2152.6	A II	—	[60 h]	Rt
2162.28	Os	10	1	a	2157.06	Zn	—	[2]	Vs	2152.551	W	—	5	—
2162.271	Pd II	3	40	—	2157.06	V	—	2 w	—	2152.55	Cb	—	2 w	—
2162.24	Fe	10 h	—	—	2157.02	Mo	—	9	—	2152.5	Sn	30	—	MI
2162.196	Co I	6	—	—	2157.0	In	—	2	—	2152.50	Mo	—	12	—
2162.022	Fe I, II	5	25	—	2156.949	Bi	75 R	—	Om	2152.32	Yb	3	10 h	Me
2161.94	Ag	—	15	—	2156.94	Co II	4	10	—	2152.24	Fe	8	—	—
2161.93	Cl	—	[10]	Jv	2156.88	Os	4	20	a	2152.22	Ni I	10	1	—
2161.61	Hf II	10	10 h	Me	2156.80	Ti II	2	10	—	2152.22	Sn II	—	[100]	Mc
2161.60	Yb	100	250	Me	2156.79	Yb	—	2	Me	2152.148	Co I	10	—	—
2161.577	Fe I	6	—	IMe	2156.73	Lu	—	4	Me	2152.140	W	3	20	—
2161.53	Cb	4	—	—	2156.730	Cb	8	20	—	2152.08	Pt I	20	10	—
2161.50	V	—	4	—	2156.71	Re	30	8	a	2152.06	Cb	—	5	—
2161.38	Ir	15	25	—	2156.69	Co II	—	3	—	2152.01	Ti I	5 R	—	Fl
2161.36	La II	2 h	4	Me	2156.688	W	—	6	—	2151.922	Ni I	10	—	—
2161.314	Cu II	—	40	Sh	2156.51	Yb	—	3	Me	2151.897	Fe	5	—	—
2161.275	Be II	—	[2]	Ps	2156.51	Ta	3	8	a	2151.818	V II	—	50	—
2161.224	Ni II	10	30	—	2156.47	Fe	20	—	—	2151.801	Cu II	—	30	Sh
2161.158	Fe II	—	12	—	2156.44	Hf II	25	25	Me	2151.77	Re	7	—	a
2161.05	Mo	—	25 l	—	2156.42	W	5	25	—	2151.76	Fe	—	5 h	—
2161.03	Ni I	15	1	—	2156.31	Os	50	3	a	2151.70	Fe	20	—	—
2161.02	Ir	15	3	—	2156.27	Tm	—	5	Me	2151.62	Ir	2 w	80	—
2161.00	Os	50	1	a	2156.26	Cb	—	4 w	—	2151.48	Sn II	—	10	—
2160.91	W	—	30	—	2155.99	Ir	4	5	—	2151.39	Ta	10	12	a
2160.74	Ir	10	50	—	2155.92	Lu	—	3	Me	2151.20	Yb	—	2 h	Me
2160.5	Be	—	2	MD	2155.91	Pd	—	[2]	Bx	2151.099	Fe I	8	10	IMe
2160.48	W	—	9	—	2155.81	Fe	5	—	—	2151.06	Cd	—	[3]	Tk
2160.44	Re	12	7	a	2155.81	Ir	25	10	—	2151.056	V II	—	40	—
2160.272	Cb	5	50	—	2155.79	Os	40	2	a	2151.05	Zr II	—	5	—
2160.27	Yb	—	10 h	Me	2155.70	Cd II	—	[30]	Tk	2151.02	Pd	10	—	—
2160.24	Fe	2	—	—	2155.64	Fe	8	—	—	2151.01	Ta	5	—	a
2160.233	Zr	5	—	—	2155.623	Cb	5	25	—	2150.85	Re	—	12	a
2160.02	Ir	10	10 w	a	2155.59	Ti II	3	15	—	2150.84	Sn	—	5	—
2159.98	Os	60	5	a	2155.51	Yb	—	40	Me	2150.840	V II	—	40	—
2159.95	W II	6	10	—	2155.3	K	—	[20]	MI	2150.78	Ca I	10	—	Cw
2159.94	Zr	1	2 w	—	2155.30	Re	3	5	a	2150.648	Pt	15	8	—
2159.91	Lu	—	2	Me	2155.26	W II	—	2	—	2150.625	Fe II	—	15	—
2159.893	Fe I	12	2	—	2155.242	Fe I	3	—	—	2150.62	Ta	12	25	a
2159.88	Yb	—	3 h	Me	2155.18	Yb	—	7	Me	2150.6	bh C	30	—	L
2159.79	Te I	100	—	MI	2155.14	Cb	—	2 w	—	2150.59	Al I	5	—	Gn
2159.650	Fe I	8	3	—	2155.08	Ta	12	18	a	2150.54	Ir	20	4 h	—
2159.526	Ti II	3	10	—	2155.020	Fe I	4	—	—	2150.45	Yb	—	3	Me
2159.52	Os	60	—	a	2154.83	Os	10	—	a	2150.43	Si I	5	—	Ks
2159.52	Pb	15	—	—	2154.81	In	—	2	Sd	2150.42	Os	5	15	a
2159.48	W	—	8	—	2154.73	Cb	3	—	—	2150.30	Hf	10	10 h	Me
2159.420	Fe I	3	—	—	2154.72	Hg	—	[2]	Dj	2150.231	Pt II	3	25	—
2159.381	Ir	2	—	Ab	2154.70	Ti II	3	60	—	2150.182	Fe I	8	2 h	IMe
2159.26	Sb	15	10	Wt	2154.66	Hf II	4	4 h	Me	2150.13	Os	10	2	a
2159.20	Re	5	3	a	2154.59	Nd	—	3	—	2150.07	Hf II	5	5	Me
2159.19	Zr	—	3	Ks	2154.59	Os	25	10	a	2149.97	Os	15	10	a
2159.15	Fe	4	—	—	2154.59	Ir	—	30	—	2149.86	Hf	6	6 h	Me
2159.085	Ti II	4	20	—	2154.458	Fe	15	—	IMe	2149.81	Os	10	2	a
2159.02	Kr	—	[2 h]	Me	2154.36	Lu	—	7	Me	2149.77	Mo	—	9	—
2159.0	A II	—	[60 h]	Rt	2154.25	Re	10	—	a	2149.703	Pt II	—	20	—
2158.97	Sb	20	10	Wt	2154.21	Ta	6	15	a	2149.63	Re	2 h	7	a

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2149.62	Fe	2	-	-	-	2145.61	Ag II	8	150	-	-	2141.76	Sb	30	30	Wt	-
2149.535	Cb	10	20	-	-	2145.50	Cu II	-	12	-	-	2141.715	Fe I	8	-	IMe	-
2149.43	Yb	-	3	Me	-	2145.45	Co	12	-	-	-	2141.70	V	-	3	-	-
2149.42	K	-	[10]	MI	-	2145.45	Mo	-	12	-	-	2141.67	Yb	-	5	Me	-
2149.392	V II	-	7	-	-	2145.44	Re	-	12	a	-	2141.65	Ir	1 h	4	a	-
2149.31	Sn II	-	[3]	Mc	-	2145.41	Ta	-	18	a	-	2141.50	Ta	3	35	a	-
2149.21	Ag	-	8	-	-	2145.39	W	-	3	-	-	2141.471	Fe	10	-	-	-
2149.20	Os	-	10	a	-	2145.39	Al I	5	-	Gn	-	2141.43	Zr	1 h	2	-	-
2149.17	Fe	10	-	-	-	2145.26	Os	10	-	-	-	2141.37	Mo	-	6	-	-
2149.15	Zr	4	-	-	-	2145.188	Fe I	12	2	IMe	-	2141.30	Pd II	-	5 h	-	-
2149.147	W	3	10	-	-	2145.18	Ni I	8	10	-	-	2141.26	Os	4	-	a	-
2149.13	Pd	-	30	-	-	2145.08	Kr II	-	[10]	Me	-	2141.166	Pt II	-	15	-	-
2149.108	P I	15	[25]	Rf	-	2145.04	Sb	20	-	Wt	-	2141.13	Hg	-	[5 h]	Dj	-
2149.03	Cb	-	2	-	-	2145.04	Cd	-	[20]	Bl	-	2141.11	Ir	5 w	-	a	-
2148.974	Cu II	15	25	IBu	-	2145.026	Pt	12	4	-	-	2141.10	Os	8	-	a	-
2148.97	Ir	10	-	-	-	2144.80	Cb	1 wh	4	-	-	2141.08	Fe I	2	8	-	-
2148.96	Cd	-	[2]	Tk	-	2144.80	Mn	-	10	a	-	2141.0	K	-	[2]	MI	-
2148.92	Yb	-	10	Me	-	2144.74	Yb	-	30	Me	-	2141.00	Yb	-	10	Me	-
2148.850	W	-	8	-	-	2144.73	Cu II	1 h	3	-	-	2140.95	Re	12	-	a	-
2148.74	Sn I	50 R	20	-	-	2144.73	Hf II	3	3 h	Me	-	2140.88	Ru	12	-	a	-
2148.720	Cb	5	-	-	-	2144.67	Hg	-	[5]	Dj	-	2140.70	Re	-	8	a	-
2148.708	Co I	6	-	-	-	2144.58	Ir	-	15	a	-	2140.69	Pd	2 h	3	-	-
2148.646	Cb	8	15	-	-	2144.5	K	-	[18]	Sq	-	2140.67	Cu I	4	-	-	-
2148.62	Os	3	15	a	-	2144.50	W	8	10	-	-	2140.53	Ir	3	10	a	-
2148.50	Fe	5	-	-	-	2144.492	Cb	4	2	-	-	2140.49	K	-	[2]	MI	-
2148.49	Yb	-	4	Me	-	2144.45	Fe	25	-	-	-	2140.46	Ta	-	4	a	-
2148.420	V II	5	35	-	-	2144.41	Bi	-	5	Om	-	2140.41	Yb	-	2	Me	-
2148.394	Fe I	3	-	-	-	2144.382	Cd II	50	200 R	Hz	-	2140.39	Cb	5	10	-	-
2148.28	Pd II	-	25	-	-	2144.28	Ir	10	3	-	-	2140.26	Pd II	-	30	-	-
2148.27	Os	7	-	a	-	2144.25	Pd	2	25	-	-	2140.13	Ta	12	30	a	-
2148.22	Ir	25	50	-	-	2144.231	Pt I, II	35	100	-	-	2140.09	Ni	2	-	-	-
2148.15	A	-	[5]	Rt	-	2144.20	Cb	-	10 w	-	-	2140.087	V II	10	80	-	-
2148.15	Zn II	-	[50]	Vs	-	2144.17	Hf II	6	6 h	Me	-	2140.08	Sn	-	2	Ar	-
2148.07	Yb	-	8	Me	-	2144.11	Re	3	12	a	-	2140.08	Ir	5	-	a	-
2148.07	Mn	-	10	a	-	2144.10	As I	50 r	-	Me	-	2140.06	W	-	8	-	-
2148.04	Te	-	[15]	Lc	-	2144.090	W	10	10	-	-	2140.03	Rh	-	5	a	-
2148.003	Hg II	-	[60]	Ps	-	2144.07	Mo	-	20	-	-	2140.01	A	-	[10]	Rt	-
2147.99	V	-	3	-	-	2144.07	Ir	-	5	-	-	2139.98	Tl	-	10	Sd	-
2147.99	Re	10	-	a	-	2144.01	Zr II	-	3 w	Ks	-	2139.97	Os	3	-	a	-
2147.984	W	-	4	-	-	2143.97	Rh	-	25	a	-	2139.96	Yb	-	25	Me	-
2147.97	Tm	5	3	Me	-	2143.90	Fe	8	-	-	-	2139.93	Fe I	4	-	-	-
2147.96	Pd	-	18	-	-	2143.86	Yb	-	4	Me	-	2139.821	V II	5	25	-	-
2147.91	Si I	3	-	Ks	-	2143.84	Lu	-	3	Me	-	2139.78	Ir	-	15	a	-
2147.803	Ni I	15	8	-	-	2143.713	V II	3	4	-	-	2139.76	Sb	30	30	Wt	-
2147.80	Mo	-	10	a	-	2143.679	Co I	3	-	-	-	2139.76	Rh	-	5	a	-
2147.787	Fe	8	-	IMe	-	2143.65	Ta	2	5	a	-	2139.695	Fe I	8	8	IMe	-
2147.76	Cd	-	[2]	Tk	-	2143.61	Ti	5	-	-	-	2139.64	W II	12	-	-	-
2147.74	Ir	2	10	a	-	2143.54	Te	-	[25]	Lc	-	2139.56	Ir	4	-	a	-
2147.66	Mo	-	5	-	-	2143.48	Re	7	2	a	-	2139.48	Re	-	3	a	-
2147.60	V	3 wh	-	-	-	2143.46	Bi II	-	12	MI	-	2139.44	Mo	2	12	-	-
2147.59	Lu	-	2 h	Me	-	2143.42	Yb	-	5	Me	-	2139.43	Rh	-	100	a	-
2147.52	Re	9	2 h	a	-	2143.40	Bi II	-	12	MI	-	2139.30	W	-	5 wh	-	-
2147.51	Mo	-	7	-	-	2143.35	Bi II	-	8	MI	-	2139.29	Tl	-	3	-	-
2147.50	Yb	-	3 h	Me	-	2143.25	Mo	2 h	15	-	-	2139.25	Yb	-	2	Me	-
2147.46	As	-	12	Rf	-	2143.23	Os	12	3	a	-	2139.25	Ti II	1	2	-	-
2147.46	V II	2	100	-	-	2143.21	Cb	4	6	-	-	2139.24	Hf II	30	40	Me	-
2147.39	Co II	-	2	-	-	2143.20	Ir	-	8	a	-	2139.22	Ir	4	-	a	-
2147.39	Pt	6	-	-	-	2143.16	Ta	-	30	a	-	2139.2	A	-	[5]	Rt	-
2147.36	Os	5	8 d	a	-	2143.047	V II	10	50	-	-	2139.19	Lu	-	6	Me	-
2147.27	Os	2	8 d	a	-	2143.00	Re	10	4	a	-	2139.17	Os	-	9	a	-
2147.194	Cb	10	20	-	-	2142.91	Cb	1 h	6	-	-	2139.16	W II	6	12	-	-
2147.19	Te I	-	[150]	MI	-	2142.89	Fr	-	30	-	-	2139.15	Re	18	-	a	-
2147.19	Se	-	[12]	Rd	-	2142.82	Ir	3	1	-	-	2139.15	Cr	-	18	a	-
2147.04	Fe	8	-	-	-	2142.81	La	2 h	18 hl	Me	-	2139.06	Ni II	-	3	-	-
2146.98	Cu II	-	15	-	-	2142.78	Re	10	15	a	-	2139.06	Re	-	20	a	-
2146.97	Co II	-	10	-	-	2142.75	Te I	600	-	MI	-	2138.971	Co I	15	-	-	-
2146.90	W	-	8	-	-	2142.74	V II	-	3	-	-	2138.88	Cb	2	8	-	-
2146.87	Ta	10	40	a	-	2142.73	Os	4	3	a	-	2138.75	Os	3	1	a	-
2146.75	Cs II	-	[15]	Rf	-	2142.57	Pd	3	-	a	-	2138.66	Rh	-	25	a	-
2146.71	Fe	2	-	-	-	2142.53	Ta	8 h	20 s	a	-	2138.61	Os	8	-	a	-
2146.70	Pd II	-	8	-	-	2142.511	W	3	8	-	-	2138.589	Fe I	8	-	IMe	-
2146.62	V I	3	-	-	-	2142.499	Pt II	2	12	Sh	-	2138.58	Ni II	10	15	-	-
2146.46	Yb	-	3	Me	-	2142.44	Mo	-	10	-	-	2138.57	Ir	15	-	a	-
2146.368	Cb	-	15 w	-	-	2142.43	V II	-	4	-	-	2138.56	Zn I	800 R	500	Hz	-
2146.361	W	-	4	-	-	2142.38	Os	4	-	a	-	2138.552	Cb	2	-	Me	-
2146.264	Co I	12	6	-	-	2142.28	Rh	3	3	a	-	2138.53	As	2	-	Rf	-
2146.167	W	4	8	-	-	2142.25	Ir	20	10	-	-	2138.507	Cu I	25 wh	-	-	-
2146.14	Cb	-	3 wh	Me	-	2142.22	Mo	-	12	-	-	2138.40	Os	3	4	a	-
2146.04	Fe	1	10	-	-	2142.18	Yb	-	4	Me	-	2138.32	Yb	-	10	Me	-
2145.991	V II	5	40	-	-	2142.13	Pd I	15	-	-	-	2138.25	Hg	-	[5]	Dj	-
2145.92	Re	6	15	a	-	2142.13	Os	-	5 s	a	-	2138.16	V II	8	50	-	-
2145.81	Ta	-	12 h	a	-	2142.02	Cb	2	6	-	-	2138.15	W II	10	25	-	-
2145.80	Ag II	-	5 h	-	-	2141.980	V II	10	80	-	-	2138.05	Ni II	-	5	-	-
2145.777	W	-	12	-	-	2141.84	Hf II	20	20	Me	-	2138.01	Fe	2	3	-	-
2145.71	Re	6	8	a	-	2141.78	Re	10	4	a	-	2137.94	Os	8	-	a	-

2137.9—2126.0 A.

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities			
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R
2137.93	C II	—	6	—	Fl	2133.66	Yb	—	4 h	—	Me	2130.09	Ir	4	—	—	a
2137.780	Co I	15	2	—	—	2133.66	Ti II	—	2	—	—	2129.95	V	—	2 w	—	—
2137.77	Re	—	8	—	a	2133.626	Bi I	100 W	40	—	—	2129.95	Ni I	15	3	—	—
2137.71	Yb	—	15	—	Me	2133.58	Os	3	5	a	—	2129.93	Zr	—	2	—	Ks
2137.684	Zr II	10	6	—	—	2133.46	Co II	2	4	—	—	2129.86	Mn	3	10	—	a
2137.652	W II	3	3	—	—	2133.42	Re	10	—	a	—	2129.85	Ir	10	5 wh	—	a
2137.62	Rh	—	5	—	a	2133.37	Mo	2 h	15	—	—	2129.70	Cb	1	4	—	—
2137.56	K	—	[30]	—	MI	2133.37	Ir	4	3 h	a	—	2129.64	Yb	—	4 h	—	Me
2137.56	Re	7	—	—	a	2133.36	Hf	4	4 h	Me	—	2129.64	Co	2	12	—	a
2137.545	Cb	5	40	—	—	2133.34	Yb	—	3	—	Me	2129.508	Co I	5	—	—	—
2137.52	Yb	—	9	—	Me	2133.32	Ti II	—	2	—	—	2129.48	Au I	6	—	—	—
2137.5	bh C	20	—	—	L	2133.31	Os	3	2	a	—	2129.48	Os	3	3	—	a
2137.45	C II	—	2	—	Fl	2133.31	Fe	4	—	—	—	2129.469	V II	5	35	—	—
2137.35	Rh	—	5	—	a	2133.30	Pd II	3	2	—	—	2129.46	Ir	4	10	—	a
2137.31	V II	10	80	—	—	2133.282	Zr II	5	6	—	—	2129.44	Al I	5	—	—	Gn
2137.24	Pd II	—	40	—	—	2133.17	Yb	—	3	—	Me	2129.33	Ti I	5 R	—	—	Fl
2137.22	Hf II	6	6	—	Me	2133.15	Re	3	7	a	—	2129.28	Rh	3	35	—	a
2137.2	A	—	[40]	—	Rt	2133.06	Mo	—	15	—	—	2129.22	Ta	10	15	—	a
2137.19	Ta	2	10 l	—	a	2133.05	V	—	50	—	—	2129.14	Ni II	—	4	—	—
2137.15	W	4	12	—	a	2132.95	Ir	5	2	—	—	2129.12	Cd II	—	[10]	—	Tk
2137.11	Os	100	30	—	a	2132.91	V	3 w	—	—	—	2129.12	Ag II	—	10	—	—
2137.11	Sb	12	8	—	Wt	2132.88	Ta	2	25 s	a	—	2129.10	Hf II	60	100	—	Me
2137.054	Cb	5	30	—	—	2132.83	Cb	—	12	—	—	2129.02	Cb	1	3	—	—
2137.02	Ir	8	—	—	a	2132.81	W	—	6	a	—	2128.92	Os	5	—	—	a
2136.81	Os	6	—	—	a	2132.8	K	—	[10]	—	MI	2128.9	K	—	[20]	—	MI
2136.73	Re	—	8	—	a	2132.767	Co	10	3	—	—	2128.82	Yb	—	2	—	Me
2136.70	Tm	—	5	—	Me	2132.67	Os	10	3	a	—	2128.80	Re	12	4	—	a
2136.69	Os	20	1 h	—	a	2132.56	Ir	3	80	a	—	2128.78	Os	8	10 l	—	a
2136.66	Pr	—	30	—	a	2132.49	Os	2	10	a	—	2128.67	Re	7	—	—	a
2136.49	Co II	—	2	—	—	2132.46	Pt I	5	—	—	—	2128.63	Mo	—	15	—	—
2136.46	Zn	—	[10]	—	Bl	2132.33	Rh	3	4 w	a	—	2128.62	Ir	2	5	—	a
2136.37	Ta	12	10	—	a	2132.31	Lu	—	5	—	Me	2128.61	Pt I	30	25	—	—
2136.33	Yb	—	2	—	Me	2132.29	Ir	4 w	—	a	—	2128.6	bh C	5	—	—	L
2136.31	Rh	2	20 s	—	a	2132.28	Hf II	9	10	—	Me	2128.57	Ni II	5	30	—	—
2136.199	P I	15	[25]	—	Ri	2132.27	W	—	10	—	—	2128.41	Ni I	15	—	—	—
2136.19	Fe	2	—	—	—	2132.26	Os	10	2	a	—	2128.39	Lu	—	5	—	Me
2136.17	Zr I	5	—	—	—	2132.20	Ti II	—	2	—	—	2128.28	Os	—	5	—	a
2136.06	Mo	—	8	—	—	2132.015	Fe I	12	3	IMe	—	2128.241	V II	2	10	—	Me
2135.976	Cu II	25	500 w	—	IBu	2131.99	O II	—	[25]	Mh	—	2128.23	Cb	—	2	—	—
2135.957	Fe	10	5	—	IMe	2131.87	Mo	—	12	—	—	2128.14	Cb	—	3	—	—
2135.90	Si	—	[5]	—	Sy	2131.84	V II	—	25	—	—	2128.07	Er	—	250 w	—	a
2135.798	Co	4	—	—	—	2131.79	Ta	12	35	a	—	2127.97	Os	5	50	—	a
2135.75	Re	—	6	—	a	2131.76	O II	—	[25]	Mh	—	2127.95	W	2	4 wh	—	—
2135.72	Ti II	1	3	—	—	2131.71	Yb	—	2 h	—	Me	2127.94	Ir	20	15	—	—
2135.646	Pd II	—	25	—	—	2131.66	Lu	—	6	—	Me	2127.91	Ni	15	—	—	—
2135.59	Co I	3	—	—	—	2131.66	Ir	—	50	—	—	2127.87	Fe	5	—	—	—
2135.466	P I	12	[20]	—	Ri	2131.48	Os	4	25	a	—	2127.77	Ni II	4	—	—	a
2135.46	Ta	—	6	—	a	2131.39	Er	7	2 h	a	—	2127.71	Re	4	—	—	a
2135.335	Ni I	10	—	—	—	2131.38	W	—	4	—	—	2127.56	Ta	8	—	—	—
2135.22	Yb	—	20 h	—	Me	2131.37	Yb	10	20	—	Me	2127.52	Ir	15	—	—	—
2135.22	Ta	—	6	—	a	2131.33	Ir	5	5	a	—	2127.50	Hf	5	5 h	—	Me
2135.18	Lu	—	5	—	Me	2131.31	Mn	2	2	a	—	2127.46	Sb	25	15	—	Wt
2135.15	Pt	12	9	—	—	2131.266	Ni II	8	20 h	—	—	2127.43	Lu	—	4	—	Me
2135.14	Ir	5	1 h	—	a	2131.23	Cu II	—	2	Sh	—	2127.43	W	2 h	12	—	—
2135.10	Fe	2	—	—	—	2131.180	Cb	12	40	—	—	2127.417	Pt II	2	25	—	—
2135.08	Re	10	—	—	a	2131.13	U	2	2	a	—	2127.37	V II	—	5	—	—
2135.078	Pd II	—	25	—	—	2131.07	Pt	3	—	—	—	2127.26	Mo	3	15	—	—
2135.038	W	—	20	—	—	2131.052	Co I	—	—	—	—	2127.26	Ir	5	8	—	a
2134.99	Mo	—	7	—	—	2131.04	Ni II	—	10	—	—	2127.25	K	—	[20]	—	MI
2134.98	Yb	—	3 h	—	Me	2131.04	Ir	5	2 w	a	—	2127.147	Co I	10	—	—	—
2134.950	Cb	2	18	—	—	2131.0	Ra II	—	[18]	—	Rs	2127.13	Cd	—	[2]	—	Tk
2134.928	Ni I	12	2	—	—	2131.0	A	—	[2]	—	Rt	2127.03	Tm	—	8 h	—	Me
2134.86	Pd II	—	12	—	—	2131.00	Ta	8	—	a	—	2126.935	V II	3	10	—	—
2134.84	Ti II	—	3	—	—	2130.962	Fe	20	—	IMe	—	2126.85	Re	30	7 wh	—	a
2134.80	Ta	2	2 h	—	a	2130.761	Cu I	25	3	—	—	2126.81	S	—	[15]	—	Lc
2134.709	Cb	12	18	—	—	2130.75	K	—	[20]	—	MI	2126.81	Ir	25	200	—	—
2134.70	Al I	5	—	—	Gn	2130.689	Pt II	4	30	—	Sh	2126.80	Ni II	2	25 w	—	—
2134.68	Ir	4	—	—	a	2130.677	Pd I	6	—	—	—	2126.78	Ta	2	5	—	a
2134.67	W	—	2 h	—	—	2130.65	Pr	—	8	—	—	2126.73	Re	8	—	—	a
2134.66	Os	10	2	—	a	2130.61	W	—	10	—	—	2126.72	Yb	40	200	—	Me
2134.62	Pt	12	3	—	—	2130.58	Os	10	2	a	—	2126.67	Ta	2	10	—	a
2134.53	Hf II	15	20	—	Me	2130.55	Kr	—	[2]	—	Me	2126.652	Pd II	—	20	—	—
2134.492	Cb	6	12	—	—	2130.54	Re	25	7	a	—	2126.644	Au I	6	—	—	—
2134.42	Rh	5	—	—	a	2130.48	Ta	5	8	a	—	2126.61	Hf	7	8 h	—	Me
2134.38	Os	—	8	—	a	2130.45	Ir	5	80	—	—	2126.583	V	—	15 w	—	—
2134.355	Cu II	30	40	—	IBu	2130.43	Kr	—	[2]	—	Me	2126.543	Cb	15	50	—	—
2134.308	Bi I	100 R	5 h	—	Om	2130.43	V II	—	5	—	—	2126.535	Zr	—	2	—	—
2134.28	Ni II	2	10	—	—	2130.42	Fe	5	—	—	—	2126.47	Re	10	2 h	—	a
2134.25	Cu	3 h	—	—	—	2130.40	Tm	—	10 h	—	Me	2126.37	Be I	10	—	—	Ps
2134.12	V II	30	125	—	—	2130.276	Co I	8	—	—	—	2126.34	Ta	—	8	—	a
2134.061	W	4	12	—	—	2130.26	Rh	4	5	a	—	2126.24	Ir	4	—	—	a
2133.85	Kr II	—	[2]	—	Me	2130.25	Cb	—	8	—	—	2126.199	Co I	5	—	—	—
2133.83	Re	2 h	12	—	a	2130.18	Re	7	—	a	—	2126.09	Ti	5	—	—	a
2133.81	As I	18	—	—	Me	2130.16	Ti II	—	3	—	—	2126.06	Rh	2	5	—	a
2133.72	Ir	4	18	—	a	2130.09	Hf	8	8 h	—	Me	2126.028	Cu II	15	35	—	IBu

Wave-length	Element	Intensities				Wave-length	Element	Intensities				Wave-length	Element	Intensities				
		Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R			Arc	Spk.,	[Dis.]	R	
2125.97	Ir	5	—	—	a	2122.38	Hg	—	[2]	Dj		2118.34	Ta	6	18	—	a	
2125.949	Co	5	—	—	—	2122.35	Pr	—	30	a		2118.20	Re	8	—	—	a	
2125.91	Mo	2 h	30	—	—	2122.25	Ni I	10	—	—		2118.14	Ir	2	3	—	a	
2125.90	Ni II	4	25	—	—	2122.13	V II	—	4	—		2118.12	Zn	—	—	[2]	Va	
2125.86	Co II	—	2	—	—	2122.12	Re	2 h	25	a		2118.069	Pd I	10	—	—	—	
2125.83	V	4	—	—	—	2122.02	Os	5	—	a		2118.03	W	3	12	—	—	
2125.8	Be	—	10	—	Md	2122.0	K	—	[20]	Mi		2118.00	Xe	—	—	—	[2]	Dj
2125.66	Cd II	—	[3]	—	Tk	2121.94	Fe	6	—	—		2117.96	Os	80	20	—	a	
2125.62	Ni I	15	2	—	—	2121.84	Ti	5	—	—		2117.95	Hf II	5	5 h	—	Me	
2125.56	Kr	—	[2]	—	Me	2121.88	Mo	—	12	—		2117.95	Co II	2	5	—	—	
2125.52	Ag II	—	25 wh	—	—	2121.88	Ir	12	4	a		2117.89	Ta	2	4	—	a	
2125.44	Ir	25	10	—	a	2121.75	Te	—	—	[10]	Lc	2117.83	Mo	—	15	—	—	
2125.40	S	—	[15]	—	Lc	2121.68	Ir	4	5	a		2117.83	Yb	—	4 h	—	Me	
2125.37	Rh	—	30	a	—	2121.67	Rh	5 w	—	a		2117.82	Re	7	—	—	a	
2125.34	Au	—	30	—	—	2121.66	Cb	—	12	—		2117.805	Pd II	—	15	—	—	
2125.34	Os	25	4	a	—	2121.62	Re	3 h	—	a		2117.75	Ru	4	—	—	a	
2125.322	Co I	5	—	—	—	2121.59	W	—	8	—		2117.72	Ir	10	50	—	a	
2125.24	Cu II	—	4	—	—	2121.54	Yb	—	15	—	Me	2117.66	Os	40	10	—	a	
2125.21	Re	2 h	10	a	—	2121.54	V II	—	3	—		2117.66	Rh	3 w	9	—	a	
2125.206	Cb	15	40	—	—	2121.41	Zn II	—	—	[2]	Vs	2117.62	Nd	—	25	—	a	
2125.15	Ir	4	6	a	—	2121.391	Co I	3	—	—		2117.56	Cr	—	50	—	a	
2125.148	Zr	3	2 w	—	—	2121.39	Ni I	20	8	—		2117.49	Os	3	—	—	a	
2125.116	Co	10	—	—	—	2121.25	Ir	—	5	a		2117.474	V II	3	10	—	—	
2125.11	Ni II	4	25	—	—	2121.22	Si I	7	—	—	Ks	2117.46	Te	—	[10]	—	Lc	
2125.098	Cu II	—	20	Sh	—	2121.16	Re	8	3	a		2117.42	Ru	8	—	—	a	
2125.04	Ce	—	10 w	a	—	2120.97	W	—	8	—		2117.300	Cu II	2	20	—	Sh	
2125.01	Fe	30	—	—	—	2120.91	Ag II	—	15	—		2117.28	Sb	8	6	—	Wt	
2124.82	Os	5	—	a	—	2120.90	Ta	8	25	a		2117.272	V	—	10	—	—	
2124.82	Mo	2 h	15	—	—	2120.88	Pd	—	9	—		2117.25	Mn	3	7	—	a	
2124.818	Pd	2 h	9	—	—	2120.87	Ir	8	—	a		2117.14	Lu	—	4	—	Me	
2124.81	Ni I	25	3	—	—	2120.705	Co I	10	2	—		2117.079	Pd	2	—	—	—	
2124.75	Ge	3	—	—	—	2120.70	Ni	3	3 h	—		2117.03	Ti	5	—	—	—	
2124.73	Ru	4	—	a	—	2120.60	Re	5	—	a		2117.03	Os	10	8	—	a	
2124.67	Xe	—	[3]	—	Dj	2120.52	Cb	2	8	—		2116.95	Ru	3	—	—	a	
2124.64	Lu	—	2	Me	—	2120.45	Ag II	5	80	—		2116.94	W II	8	15	—	—	
2124.60	W	—	8	—	—	2120.42	Cd	—	—	[2]	Bl	2116.888	Pd II	—	15	—	—	
2124.59	Hf II	50	80	Me	—	2120.35	W II	2 h	3	—		2116.87	Rh	3 w	50	—	a	
2124.53	Re	2 h	30	a	—	2120.26	Ta	4	—	a		2116.842	Co I	10	2	—	—	
2124.39	Ru	4	—	a	—	2120.119	Zr II	2	4	—		2116.80	Hf	4	—	—	Me	
2124.39	Os	25	5	a	—	2120.06	Rh	3	25	a		2116.78	Mo	4	20	—	—	
2124.34	Cb	2	8	—	—	2120.01	Cb	2	3	—		2116.769	V	—	3	—	—	
2124.33	Pd II	—	4 h	Bx	—	2120.01	Os	25	4	a		2116.66	Ir	10	—	—	a	
2124.150	Si I	200 R	50	Fl	—	2119.92	Ta	8	35	a		2116.65	Yb	50	250	—	Me	
2124.13	Rh	40	10	a	—	2119.904	Co I	10	—	—		2116.638	W	5	6	—	a	
2124.11	Ni	30	—	—	—	2119.9	Hf	—	2	—	Md	2116.62	Rh	4 w	3	—	a	
2124.11	V	6	5	—	—	2119.90	Ru	2	—	a		2116.47	Rh	—	35	—	a	
2124.10	Cu I	2	—	—	—	2119.88	Pt	15	10	—		2116.390	Cb	5	15	—	—	
2124.10	Mo	6	—	—	—	2119.80	Ru	2	—	a		2116.36	Hg	—	—	—	[2]	Dj
2124.09	S	—	[25]	—	Lc	2119.79	Os	125	30	a		2116.34	Os	—	30	—	a	
2124.08	Ta	2	6	a	—	2119.76	Rh	5 w	—	a		2116.30	W	4	10	—	—	
2124.04	Zn II	—	[2]	—	Vs	2119.74	Zr	2 h	2	—		2116.16	Re	6	—	—	a	
2123.99	Rh	5	25	a	—	2119.69	Mo	2	18	—		2115.97	Ir	—	10	—	a	
2123.92	Ir	4	—	a	—	2119.63	Cb	3	1	—	Me	2115.84	Yb	—	2	—	Me	
2123.84	Os	40	25 w	a	—	2119.590	Pd	—	9	—		2115.77	Re	4	—	—	a	
2123.82	Ge I	2	—	—	—	2119.561	V II	—	8	—		2115.61	Hf	4	—	—	Me	
2123.77	Si	—	[2]	—	Sy	2119.54	Ir	5	15	a		2115.578	Pt II	5	10	—	—	
2123.76	Pd	3	—	—	—	2119.52	U	2	2	a		2115.56	Re	2 h	10	—	a	
2123.68	Hf II	40	40	Me	—	2119.44	Ta	2	3	a		2115.55	Pd	2	—	—	—	
2123.67	Ru	4	—	a	—	2119.34	Ir	—	8	a		2115.46	Yb	—	4 h	—	Me	
2123.669	Pd	—	25	—	—	2119.31	Os	15	4	a		2115.43	Mo	2 h	10	—	—	
2123.64	Ir	2	2	—	—	2119.3	Hf	—	2	—	Md	2115.338	Co I	12	—	—	—	
2123.60	V II	2	8	—	—	2119.25	Yb	—	30 h	—	Me	2115.21	Ru	3	—	—	a	
2123.54	Ti	6	—	—	—	2119.192	Co	5	—	—		2115.168	Fe I	8	—	—	IMe	
2123.50	Zn II	—	[3]	—	Vs	2119.17	Rh	4	15	a		2115.11	Mo	4	18	—	—	
2123.48	Kr	—	[3]	—	Me	2119.15	V	—	25 w	—		2115.02	Hf II	20	20	—	Me	
2123.34	Os	10	—	a	—	2119.142	Zr	10	—	—		2115.02	Pb	30 R	8 w	—	—	
2123.325	V II	5	30	—	—	2119.12	Ir	4	—	a		2115.00	Ir	—	8	—	a	
2123.32	S	—	[15]	—	Lc	2119.09	Cb	—	8 w	—		2114.97	Os	5	—	—	a	
2123.30	Mo	—	25	—	—	2118.99	Ta	6	—	a		2114.87	Rh	—	45	—	a	
2123.30	Yb	—	15	Me	—	2118.873	Cb	10	20	—		2114.78	Cb	2	2	—	—	
2123.21	Ir	10	—	a	—	2118.87	W II	10	20	—		2114.62	Hf II	2	—	—	Me	
2123.17	Re	7	—	a	—	2118.83	Kr II	—	—	[12]	Me	2114.60	Fe	8	1	—	—	
2123.15	Os	5	8	a	—	2118.83	V	—	15	—		2114.59	Si I	4 w	—	—	Ks	
2123.13	Rh	3	10	a	—	2118.82	Os	15	10	a		2114.41	Co II	4	2	—	—	
2122.99	Si I	10	—	Ks	—	2118.77	Re	4	18	a		2114.41	Ni I	18	2 h	—	—	
2122.966	Cu II	15	50	IBu	—	2118.76	Ir	4	2	—		2114.31	V II	—	5	—	—	
2122.95	I	—	[20]	—	Lc	2118.68	Ca I	5	—	—	Sd	2114.30	Mo	3	12	—	—	
2122.94	Hf II	15	15 h	Me	—	2118.56	Ni I	10	—	—		2114.22	Pt	6	3	—	—	
2122.83	Os	12	3	a	—	2118.52	Sb	15	25	—	Sp	2114.2	Hf	—	2	—	Md	
2122.81	Yb	—	3	Me	—	2118.52	Ir	—	20	a		2114.2	K	—	[10]	—	Mi	
2122.76	Lu	—	6 h	Me	—	2118.505	Co	6	—	—		2114.09	Ir	8	7	—	a	
2122.74	Cb	—	15 s	—	—	2118.50	Rh	2 w	200	a		2114.04	V II	—	15	—	—	
2122.636	Pd	3	—	—	—	2118.43	V II	—	15	—		2114.00	Os	3	2	—	a	
2122.6	A	—	[5]	—	Rt	2118.38	Cu II	—	4	—	Sh	2113.95	Se II	—	[4]	—	Mz	
2122.56	Pt	15	10	—	—	2118.35	W II	—	2 h	—		2113.91	Re	12	2	—	a	

2113.9—2100.5 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2113.90	Sn	25 r	5 r	-	2109.66	Pt I	15	10	-	2105.20	I II	-	[2]	Mu
2113.83	Ir	-	8	a	2109.65	Zr II	5	10	-	2105.112	Cu I	15	-	IBu
2113.83	Ag II	20	150 wh	-	2109.60	Yb	-	100 h	Me	2105.069	Pt II	2	25	-
2113.70	Rh	-	70	a	2109.58	Mn	40 R	12	a	2105.02	Mo	5	25	-
2113.68	Ta	10	30	a	2109.49	Pt	15	10	-	2105.0	Hf	-	4	Md
2113.64	Mo	-	4	-	2109.424	Cb	15	50	-	2104.89	Rh	-	100	a
2113.59	Os	20	4	a	2109.42	Zr	2 h	-	-	2104.88	Ta	6	6	a
2113.536	Co	12	2	-	2109.38	Ir	3 h	50	a	2104.782	Cu II	8	25	IBu
2113.51	Ni II	3	45	-	2109.27	V II	-	2	-	2104.730	Co	25	2	-
2113.45	Os	3	-	a	2109.25	Os	3	10	a	2104.66	Ir	-	20	a
2113.36	Mo	-	5	-	2109.25	Re	50	8	a	2104.56	V	4	-	-
2113.36	Hg	-	[2 h]	Dj	2109.206	Co	5	-	-	2104.41	Os	6	-	a
2113.29	Ni II	2	3	-	2109.14	Lu	-	5	Me	2104.40	Lu	-	40	Me
2113.2	bh C	5	-	L	2109.11	Fe I	-	10	-	2104.36	Ti II	-	3	-
2113.09	Fe	4	-	-	2109.08	Rh	-	30	a	2104.33	Ir	2	15	a
2113.085	Cb	10	20 l	-	2108.99	Ni II	-	18	-	2104.29	Mo	4	30	-
2113.01	As I	50	5	Me	2108.980	Co	15	-	-	2104.13	Re	20	6	a
2112.966	Fe I	8	2	IMe	2108.955	Fe I	10	2	IMe	2104.09	U	2	2	a
2112.85	W	-	8	-	2108.80	Ir	3	-	a	2103.93	Ta	5	4	a
2112.83	Ta	5	18	a	2108.73	Mo	2 h	12	-	2103.87	Ir	-	50	a
2112.763	Ca II	10	25	Cw	2108.62	Ir	15	-	a	2103.761	Pt II	2	25	-
2112.70	Rh	3	80	a	2108.55	Zr	6	-	-	2103.67	V II	2	25	-
2112.68	Ir	20	10	a	2108.50	Hf	15	10 h	Me	2103.66	Pd II	-	18	-
2112.67	W	-	3	-	2108.48	Re	8	2 h	a	2103.59	Cb	10	15	-
2112.58	Os	5	4	a	2108.44	Os	5	-	a	2103.58	Ir	10	3	a
2112.45	Ir	4	15	a	2108.35	Cb	2	2 h	-	2103.52	V II	-	8	-
2112.41	Ni II	-	5	-	2108.202	Fe I	5	4	Bu	2103.48	Pt	10	-	-
2112.32	Cb	-	8	-	2108.20	Yb	-	5	Me	2103.38	Ni II	-	25	-
2112.28	Re	6	40	a	2108.10	Pd I	9	-	-	2103.33	Pt I	25	25	-
2112.17	Cd	-	[10]	Bl	2108.02	Mo	3	30	-	2103.31	Zr	4	-	Ks
2112.090	Cu I, II	15	40	IBu	2107.96	Ni II	2	45	-	2103.28	Si	5 w	-	Ks
2112.08	Pb	-	15	-	2107.93	Rh	-	30	a	2103.239	Ca II	10	25	Cw
2111.96	Ir	2	40	-	2107.91	Ru	4	-	a	2103.178	W	3	12	-
2111.90	Re	8	20	a	2107.84	Lu	-	4	Me	2103.17	Zr	-	4	Ks
2111.79	Ta	8	20	a	2107.68	Pd II	-	9	-	2103.10	Rh	25	25	a
2111.74	Pb	20 w	8 w	-	2107.68	I	-	[20]	Lc	2103.04	Ti	2	2	a
2111.72	Ni II	25	9	-	2107.651	Pt II	-	8	Sh	2102.991	W	-	4	-
2111.69	Rh	-	150	a	2107.63	Te	100	-	Kh	2102.91	Os	5	25	a
2111.46	Co II	-	15	-	2107.6	Ra II	-	[12]	Rs	2102.902	Fe I	4	-	-
2111.416	Co I	10	-	-	2107.60	Ir	3	-	a	2102.9	Hf	-	6	Md
2111.40	Os	10	2 h	a	2107.52	Os	15	3	a	2102.85	Ir	5	-	a
2111.35	Pr	-	10	a	2107.5	bh C	5	-	L	2102.81	Ni II	-	10	-
2111.34	Ir	5	2 h	a	2107.48	Re	30	8	a	2102.72	Yb	20	200	Me
2111.30	Cu II	-	[6]	Sh	2107.47	Hf II	60	60	Me	2102.69	Re	4	2 h	a
2111.21	Cb	-	5	-	2107.41	V II	-	4 wh	-	2102.63	Os	5	-	a
2111.21	Ta	5	12	a	2107.33	Ru	2	-	a	2102.45	Ir	15	6	a
2111.18	Mo	3	25	-	2107.30	Os	8	3	a	2102.45	Rh	-	50	a
2111.14	W	3	2 h	a	2107.265	Cb	10	25	-	2102.43	Pd II	-	20	-
2111.04	V	-	4	-	2107.22	Ir	-	15	a	2102.349	Fe I	15	3	IMe
2111.02	Ru	2	-	a	2107.20	Te	100	-	Kh	2102.21	Zn II	-	5	Sd
2110.98	Cb	-	3	-	2107.194	Ni I	12	-	-	2102.21	V	3	-	-
2110.98	Ir	2	5 r	a	2107.13	O	-	[25]	Mh	2102.10	Yb	-	3 h	Me
2110.95	Os	-	5	a	2107.13	Fe	8 h	-	a	2101.99	W II	6	6	-
2110.91	Re	20	-	a	2107.10	Tm	-	15	Me	2101.96	Rh	-	40	a
2110.80	Au	-	60	-	2107.01	Os	2	-	-	2101.92	Ru	5	-	a
2110.80	Pd	2	3	a	2106.96	Re	6 wh	2 h	a	2101.87	V II	-	5	-
2110.79	Nd	-	2 h	-	2106.93	W	2 h	7	a	2101.86	Ir	20	5	a
2110.74	Os	15	2	a	2106.92	Ir	20	10 l	a	2101.85	Ta	3	40	a
2110.68	Ir	12	10	a	2106.798	Co	25	2	-	2101.77	Zr I	5	-	-
2110.64	Xe	-	[3 h]	Dj	2106.76	I	-	[20]	Lc	2101.75	Re	15	6	a
2110.61	V II	-	2	-	2106.69	Ir	4	-	a	2101.74	Te	-	[10]	Lc
2110.60	Yb	-	3	Me	2106.68	W	-	10	-	2101.69	Mo	4	20	-
2110.57	Mo	-	7	-	2106.55	Re	3	30	a	2101.67	Pt	20	-	-
2110.53	Zr	8	-	-	2106.46	Yb	-	2	Me	2101.63	Ir	3	-	a
2110.50	V	-	2	-	2106.4	Hf	-	2	Md	2101.585	Pt II	-	30	-
2110.49	I	-	[20]	Lc	2106.39	Cu II	-	2	-	2101.38	Os	25	3 w	a
2110.42	Hf II	15	15	Me	2106.35	Ir	20	20 w	a	2101.35	Rh	-	30	a
2110.37	Lu	-	4	Me	2106.32	V	3	-	-	2101.32	Ti	-	2	-
2110.355	Pt II	-	20	Sh	2106.179	W	10	20	-	2101.29	O II	-	[15]	Mh
2110.34	W	10	25	-	2106.15	Re	5	-	a	2101.19	Mo	-	10	-
2110.31	Cu II	-	[4]	Sh	2106.08	Ir	-	15	a	2101.18	Os	4	-	a
2110.263	Bi I	250 R	50	Om	2106.07	O	-	[25]	Mh	2101.16	V II	3	40	-
2110.26	Re	-	7 wh	-	2106.04	Mn	40 r	-	-	2101.10	Cd	-	[5]	Bl
2110.26	Yb	-	5 h	Me	2105.93	Rh	-	15	a	2101.05	K	-	[2]	MI
2110.233	Fe I	8	-	IMe	2105.87	Pd I	18	4	-	2100.96	Ir	2 h	50	a
2110.22	Lu	-	7	Me	2105.836	Ni I	12	3	-	2100.84	Mo	6	25	-
2110.07	Cb	3	5	-	2105.83	Zr I	4	-	-	2100.84	Hg	-	[2 h]	Dj
2110.05	K	-	[10]	MI	2105.80	Ge	3	-	-	2100.795	Fe I	15	2	IMe
2109.95	V	-	5	-	2105.765	W	6	20	-	2100.78	V I	3	-	-
2109.94	Mo	4	20	-	2105.64	Ta	-	8	a	2100.76	Rh	50	-	a
2109.89	Re	4	-	a	2105.53	Ru	2	-	a	2100.69	O II	-	[2]	Mh
2109.83	Te	-	[30]	Lc	2105.49	Co II	-	2	-	2100.68	Ru	8	-	-
2109.81	Kr II	-	[5]	Me	2105.45	K	-	[2]	MI	2100.67	W	10	25	-
2109.78	Cu	2	-	-	2105.34	Co II	-	3	-	2100.63	Os	15	6	a
2109.776	Ni I	10	-	-	2105.25	Cd	-	[2]	Bl	2100.52	Rh	2	100	a

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2100.51	V I	10	—	—	—	2096.22	Rh	2	25	a	—	2091.74	Zr	3	—	2	—
2100.41	Cu	—	—	3 wh	—	2096.20	Ir	1	80	a	—	2091.71	Ni I	9	—	—	—
2100.40	Lu	—	—	30	Me	2096.18	Hf II	100	150	Me	—	2091.59	Ir	8	—	1	a
2100.36	Rh	—	—	2	a	2096.16	N II	—	—	[8]	Fl	2091.57	Hg	—	—	[5 h]	Dj
2100.34	Ta	10	15	a	a	2096.16	V	6	1	—	—	2091.50	Re	4 h	15	a	a
2100.20	Ni II	—	4	—	—	2096.05	Rh	—	80	a	—	2091.44	Ir	—	12	a	a
2100.20	Ir	20	20	a	a	2095.94	V II	—	10	—	—	2091.44	Sn	—	3	Ar	—
2100.12	Re	8	—	a	MI	2095.80	Zr II	7	10	—	—	2091.40	Cl	—	—	[8]	An
2100.0	K	—	[10]	—	—	2095.77	Co	15	2	—	—	2091.37	Cb	—	5 h	—	—
2099.97	Ir	15	4	a	a	2095.75	V	8	2	—	—	2091.34	Os	4	2 h	a	a
2099.92	Os	10	3	a	a	2095.73	Ni I	25	2	—	—	2091.34	Ga II	—	—	[40]	Sy
2099.86	Zn II	—	5	Sd	—	2095.66	Ta	3	12	a	a	2091.33	Ta	8	20	a	a
2099.68	Al II	—	[40]	Sy	a	2095.62	Re	18	2 h	a	a	2091.307	V I	10 w	5 w	—	—
2099.62	Ir	—	40	a	—	2095.594	W	3	12	—	—	2091.29	Pd	2	—	30 h	Me
2099.54	Lu	—	10 h	Me	—	2095.51	Pd II	—	12	—	—	2091.28	Yb	—	20	—	—
2099.51	Os	10	2	a	a	2095.47	N II	—	[50]	Fl	—	2091.21	Mo	3	15	—	—
2099.37	Ir	5 w	3	a	a	2095.34	V II	—	10	—	—	2091.20	N II	—	—	[15]	Fl
2099.35	Co I	10	—	—	—	2095.33	Re	7	—	a	a	2091.07	Rh	—	100	a	a
2099.32	U	2	2	a	—	2095.28	Mo	4	25	—	—	2091.05	Co II	2	6	—	—
2099.30	Zr	2 h	1	Ks	—	2095.2	Al II	—	[40]	Sy	—	2091.03	Ta	2	5	a	a
2099.30	Ta	3	30	a	a	2095.123	Ni I	15	2	—	—	2090.90	V	4	—	—	—
2099.25	Os	4	—	a	—	2095.10	As	3	3 h	Wt	—	2090.83	Hf II	40	40	Me	Me
2099.13	V II	2	25	—	—	2095.04	V II	—	6	—	—	2090.80	Ir	—	30	—	—
2099.10	Tm	—	10	Me	—	2095.04	Ir	—	15	a	a	2090.75	Fr	—	18	a	a
2098.99	Rh	15	300	a	a	2095.04	W	2 h	5	—	—	2090.71	Os	12	—	a	a
2098.96	Mn	10	—	a	—	2094.85	Ir	3	—	a	a	2090.66	V I	5 w	2 w	—	—
2098.942	Co I	12	3	—	—	2094.82	Yb	—	10 h	Me	—	2090.61	Ta	4	20	a	a
2098.91	Hf II	2	—	Me	—	2094.8	Al II	—	[50]	Sy	—	2090.60	Ru	4	—	a	a
2098.87	W	10	—	a	—	2094.77	Cu II	—	8 h	Sh	—	2090.52	Ir	8	6	a	a
2098.82	Ru	8	—	a	—	2094.749	W II	10	18	—	—	2090.5	Ga	—	5	Wb	—
2098.74	Pt	12	3	—	—	2094.70	Pt	—	4	—	—	2090.47	Co	—	2	a	a
2098.726	W	—	5 w	—	—	2094.662	V	10 w	1	Me	—	2090.389	Ni I	15	—	—	—
2098.65	Re	5 wh	12	a	—	2094.56	I	—	[20]	Lc	—	2090.33	V	—	—	25	—
2098.65	Sd	—	[50]	Lc	—	2094.53	Re	6	—	—	—	2090.32	Ir	Re	30	10	a
2098.62	Pd II	—	18	—	—	2094.33	Hf II	3	2	Me	—	2090.31	Re	30	10	a	a
2098.61	Nd	—	15	a	a	2094.3	Al II	—	[50]	Sy	—	2090.183	W	3	12	—	—
2098.60	W	10	20	a	a	2094.24	Co II	—	3	—	—	2090.135	Pd II	—	20	—	—
2098.59	V II	—	2 w	—	—	2094.23	Ge	8 R	—	—	—	2090.10	Ni II	3	25	—	—
2098.49	V	6 l	—	—	—	2094.20	Si I	2	—	Ks	—	2090.0	bh C	30	—	L	—
2098.47	Sb	30	30	Wt	—	2094.18	Ir	8	15	a	a	2098.99	Pd I	6	—	—	—
2098.46	Ru	8	—	a	—	2094.12	N II	—	[8]	Fl	—	2089.96	Er	8	—	a	a
2098.44	Re	4	—	a	—	2094.08	Pt	2	—	—	—	2089.95	Hf II	30	30	Me	Me
2098.41	Cu II	—	35	—	—	2094.05	Ir	—	3	—	—	2089.94	V I	4 wh	—	—	—
2098.4	Tl	2 R	—	Fl	—	2093.97	Ir	—	9	a	a	2089.93	Ir	—	5	—	—
2098.40	Yb	—	50 h	Me	—	2093.800	W	8	15	—	—	2089.90	S	—	[300]	Lc	—
2098.25	W	10	20	—	—	2093.64	Cl	—	[10]	Jv	—	2089.8	K	—	[40]	MI	—
2098.16	Yb	—	3	Me	—	2093.606	Cu II	2	20	Sh	—	2089.79	As I	5	1	Me	—
2098.14	S	—	[300]	Lc	—	2093.56	Ni II	6	20	—	—	2089.60	Nd	—	9	a	a
2098.00	V II	—	2	—	—	2093.41	V	—	2	—	—	2089.59	B I	150	20	Sy	—
2097.96	Ta	8	15	a	a	2093.40	Co	15	—	—	—	2089.59	Pd II	2	25	—	—
2097.83	Rh	3 h	200	a	a	2093.39	Mn	30 r	18	—	—	2089.56	Zr	4	—	—	—
2097.65	K	—	[10]	MI	—	2093.37	Kr II	—	[3]	Me	—	2089.52	Mo	3	18	—	—
2097.65	Zn	—	[2]	Vs	—	2093.3	K	—	[5]	MI	—	2089.48	Rh	—	80	a	a
2097.64	Re	12	—	a	—	2093.28	Cb	—	8	—	—	2089.38	Hf	3	—	Me	—
2097.63	Bi	2 h	—	To	—	2093.22	Hf II	7	—	Me	—	2089.21	Os	20	4	a	a
2097.60	Os	25	8 w	—	—	2093.18	Yb	—	6 h	Me	—	2089.16	Cr	—	15	—	—
2097.58	N II	—	[8]	Fl	—	2093.11	Mo	6	25	—	—	2089.143	W	10	20	—	—
2097.55	Ir	5	—	a	a	2093.08	Cb	—	5	—	—	2089.07	Ni I	15 r	15 h	—	—
2097.55	I	—	[20]	Lc	—	2092.86	Zr I	4	—	—	—	2089.048	Pt II	—	15	Sh	—
2097.54	Mn	18	30	—	—	2092.86	O II	—	[3]	Mh	—	2089.03	Os	20	4	a	a
2097.54	Rh	3 h	3 h	a	a	2092.80	Co	—	5	a	a	2088.98	Ni I	30 d	—	—	—
2097.511	Co	20	—	—	—	2092.77	Ir	15	5	a	a	2088.96	Nd	—	12	a	a
2097.49	Ca I	3	—	Sd	—	2092.64	Rh	10	25	a	a	2088.93	B I	100	15	Sy	—
2097.440	Pt II	9	30	—	—	2092.63	Ir	20	20	—	—	2088.93	Pt	10	1	—	—
2097.41	Yb	—	2	Me	—	2092.62	Pd I	12	—	—	—	2088.89	Zr	2	—	Ks	—
2097.33	V I	10	—	—	—	2092.54	W	10	3	a	a	2088.86	Ru	2	—	a	a
2097.30	Ir	—	25	a	a	2092.50	Mo	6	20	—	—	2088.82	Ir	50	50	Me	—
2097.27	Pt	10	—	—	—	2092.495	V	10	5	Me	—	2088.77	Hf II	50	50	Me	—
2097.24	Ru	5	—	a	a	2092.49	Re	18	50	a	a	2088.712	Pt II	2	25	Sh	—
2097.16	Re	40	10	a	a	2092.48	Mn	15	—	—	—	2088.67	Ta	8	30	a	a
2097.12	Co II	—	4	—	—	2092.44	V I	10	—	Me	—	2088.66	Re	4 wh	7	a	a
2097.10	Ir	4	50	a	a	2092.38	Pd II	—	25	—	—	2088.56	V	15 w	1	—	—
2097.096	Ni II	4	35	—	—	2092.35	V I	5	—	—	—	2088.52	Cl	—	[8]	An	—
2097.02	Zr	—	4	Ks	—	2092.31	Yb	—	30 h	Me	—	2088.52	Cd	—	10	—	—
2097.02	V II	—	8	—	—	2092.26	Re	18	—	a	a	2088.51	Ir	1 h	20	a	a
2096.87	Re	3 h	3 h	a	a	2092.14	Lu	—	6	Me	—	2088.49	Pd I	6	—	—	—
2096.84	Yb	—	30 h	Me	—	2092.13	Mn	30 r	20	—	—	2088.43	Pb	30 R	40 W	—	—
2096.79	N II	—	[15]	Fl	—	2092.12	Os	3	—	a	a	2088.39	Cd	—	[2]	Bl	—
2096.70	Ir	—	4	—	—	2092.077	W	—	25	—	—	2088.38	Ru	5	—	a	a
2096.63	Cd II	—	[100]	Tk	—	2092.01	Pd II	—	30	—	—	2088.31	Os	4	—	a	a
2096.57	Os	10	1	a	a	2091.98	Nd	—	12	a	a	2088.29	Pt	12	4	—	—
2096.53	Xe	—	[2]	Dj	—	2091.90	Os	1	10	a	a	2088.28	Mo	3	10	—	—
2096.35	V	5	15 w	—	—	2091.86	Ir	10	20 s	—	—	2088.192	W	12	30	—	—
2096.28	Os	12	15	a	a	2091.84	V II	—	3	—	—	2088.16	Kr II	—	[20]	Me	—
2096.24	Kr II	—	[15]	Me	—	2091.75	Re	8	—	a	a	2088.05	Yb	—	15 h	Me	—

2087.9—2072.9 A.

Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity Arc	Spk., [Dis.]	R
2087.94	Pd I	15	5	-	2083.43	Ir	-	25	-	2078.12	Yb	-	10 h	Me
2087.92	Cu II	-	30	-	2083.38	Re	7	9	a	2078.09	Os	25	10	a
2087.89	Re	8	-	a	2083.35	Ce	-	25	a	2077.97	Rh	-	15	a
2087.84	Os	20	4	a	2083.34	Pt	18	9	-	2077.95	Pd I	10	-	-
2087.74	Cu	2	-	-	2083.22	Ir	25	10	a	2077.9	K	-	[80]	MI
2087.736	Ni	2	6 h	-	2083.20	Os	15	2	a	2077.8	Bi II	-	5	MI
2087.66	Re	2	18	a	2083.15	Zn	-	[2]	Vs	2077.80	V	-	20	-
2087.66	Hf	4	-	Me	2083.03	Ta	-	5	-	2077.67	Ir	-	12	a
2087.61	V	3	5	-	2082.93	Rh	-	8 d	a	2077.55	V	-	10	-
2087.60	I	-	[20]	Lc	2082.92	Cu II	-	6	-	2077.435	Pt II	10	20	Sh
2087.58	Pb	12	-	-	2082.89	Cb	6	25	a	2077.33	Os	15	3	a
2087.50	Lu	-	5	Me	2082.856	Ni I	25	2	-	2077.30	Re	25	8	a
2087.48	Rh	30	25	a	2082.80	Hf II	15	8	Me	2077.18	Rh	2	6	a
2087.47	W	4	12	a	2082.79	-	1	12	a	2077.18	Ni	2	-	-
2087.37	Yb	-	3 h	Me	2082.73	Ca I	2	-	Sd	2077.14	Zn	-	[10]	Vs
2087.31	Be	2	-	-	2082.68	Co	3	25	-	2076.95	Os	25	12	a
2087.27	Ta	4	20	a	2082.60	Kr	-	[2]	Me	2076.85	V	5	25 w	a
2087.19	Re	6	-	a	2082.54	Os	20	5	a	2076.83	Rh	-	100	a
2087.09	Cb	-	2	-	2082.51	Pt I	15	7	-	2076.76	Ir	2	40	-
2087.03	Re	9	-	a	2082.51	V I	25 w	-	-	2076.70	Hf	3	-	Me
2087.0	Al II	-	[40]	Sy	2082.34	Rh	2	9	a	2076.61	Ir	5	-	a
2087.00	Cl	-	[10]	An	2082.27	Pd I	18	2	-	2076.49	V	-	2	-
2086.92	Ir	3	20	a	2082.26	Re	7	20 w	a	2076.47	Pd	4	-	a
2086.866	Pt	3	20	-	2082.22	Ir	6	5 h	a	2076.43	Ru	4	-	a
2086.80	Hf II	8	4	Me	2082.1	K	-	[10]	MI	2076.42	Ir	2	5	a
2086.80	Ir	9	3	a	2082.04	Ta	4	-	a	2076.32	Ta	12	30	a
2086.78	Mo	2 h	10	-	2082.01	Si I	15	-	Ks	2076.29	Zr	-	2	Ks
2086.73	Kr II	-	[5]	Me	2081.88	Te	-	[5]	Lc	2076.22	Rh	-	10	a
2086.62	Os	5	-	a	2081.83	Ir	2	9	-	2076.21	Pt	5	4	-
2086.60	W II	4	4	-	2081.72	Os	3	-	a	2076.19	Ni II	-	4	-
2086.58	Ir	-	20	a	2081.67	V	4	3	-	2076.10	Os	4	-	a
2086.57	V	4 w	-	-	2081.52	Rh	-	30	a	2076.07	Ir	-	20	a
2086.49	Pd II	-	25	-	2081.5	Al II	-	[8]	Sy	2076.043	Ni I	10	-	-
2086.45	Lu	-	4	Me	2081.46	Os	20	10	a	2076.04	Hf	4	-	Me
2086.32	V I	6	2 wh	-	2081.42	Pd II	-	25	-	2075.96	W	5	10	a
2086.29	Hf	12	-	Me	2081.39	W	8	-	a	2075.90	Ir	8	3	a
2086.23	Os	2	5	a	2081.29	I	-	[40]	Lc	2075.85	Os	5	-	a
2086.06	Ir	4	1	a	2081.12	Pd I	20	-	-	2075.69	Re	7	12	a
2086.06	Lu	-	2	Me	2081.11	V	-	5 wh	-	2075.65	Os	6	-	a
2086.0	Sb	-	[8]	Lg	2081.08	Se	-	[15]	Rd	2075.607	Ag II	-	10 wh	-
2086.00	Ge I	4	-	-	2081.03	Te I	400	-	MI	2075.59	I	-	[12]	Lc
2085.92	Ta	3	25	a	2080.97	Zr	-	4	-	2075.59	W	10	20	-
2085.80	Re	7	25	a	2080.95	Ir	8	15	-	2075.45	W	3	4	a
2085.74	Ir	30	20	a	2080.94	Er	8	-	a	2075.43	Ir	-	25	-
2085.69	Lu	-	5	Me	2080.91	Cu	4 h	-	-	2075.386	Pt II	5	25	-
2085.62	Re	30	7	a	2080.849	Ni II	3	35	-	2075.22	Re	4	2	a
2085.58	Rh	-	100	a	2080.74	V	-	2 wh	-	2075.14	O II	6	[15]	Mh
2085.57	S	-	[8]	Lc	2080.64	Ir	2	60	-	2075.05	Ir	6	15	a
2085.550	Ni I	6	-	-	2080.28	Os	4	2	a	2074.95	Os	15	5	a
2085.53	Zn II	-	[20]	Vs	2080.24	Rh	1	30	a	2074.90	Zr	-	2	Ks
2085.50	Er	6	-	a	2080.06	Cu II	-	8 h	-	2074.88	Re	3	6	a
2085.418	Pt II	-	15	Sh	2080.05	Cb	3	15	a	2074.87	V	-	15	-
2085.348	Ni I	15	2	-	2079.97	Os	40	10	a	2074.793	Se I	-	[100]	Rd
2085.303	Cu II	2	25	-	2079.85	Ta	4	6	a	2074.74	Te	30	-	Kh
2085.29	As I	12	3	Me	2079.82	Zn II	-	[2]	Vs	2074.72	Re	10	4	a
2085.22	Cu I	-	7 h	-	2079.762	Pt II	1	15	-	2074.63	W II	8	8	-
2085.2	K	-	[20]	MI	2079.72	Hf	6	-	Me	2074.59	Ir	10	4	a
2085.18	Rh	-	35	a	2079.71	Ir	-	40	-	2074.58	Ni	2	-	-
2085.15	Nd	-	20	a	2079.66	W	2	6	a	2074.5	As	-	20	Lg
2085.09	W	3	9	a	2079.66	Rh	5	-	a	2074.33	Ir	8	-	a
2084.89	W	2 h	8	a	2079.64	Nd	-	15	a	2074.29	Mo	4	15	a
2084.86	Ni II	-	25	-	2079.63	Sb	10	-	Wt	2074.15	Ir	4	-	a
2084.76	Ru	3	-	a	2079.496	Pt II	-	15	-	2074.12	Ni II	-	15	-
2084.59	Pt I	25	30	-	2079.46	Cu I	15 h	-	-	2074.10	Os	3	-	a
2084.55	Re	9	3 h	a	2079.41	As I	2	1	Ro	2074.03	Zr	-	5	Ks
2084.51	Os	8	1	-	2079.37	Rh	3 h	25	a	2074.0	Pb	-	20	Lg
2084.49	Ir	-	80	a	2079.33	Ir	15	5	a	2074.00	Cd	-	[5]	Bi
2084.48	W	2 h	8	-	2079.32	Pd	2	-	-	2073.94	Re	7	3	a
2084.47	Si I	20	-	Ks	2079.31	Ta	2	12 h	a	2073.94	Cr	-	3	-
2084.45	Hf	2	-	Me	2079.31	Cr	-	2 h	-	2073.92	Os	10	-	a
2084.38	Ir	5	-	a	2079.26	In II	-	15	Lg	2073.84	Os	-	10	a
2084.32	Cu II	-	4	-	2079.21	Os	10	1	a	2073.8	Al II	-	[15]	Sy
2084.27	W	2 h	10	a	2079.11	Hf II	3 d	-	Me	2073.8	Ga	-	3 h	Wb
2084.22	Ir	-	12	-	2079.106	W	12	30	-	2073.75	Rh	1	30	a
2084.12	Ni	8	-	-	2078.99	Os	5	20	a	2073.70	Yb	-	8 h	Me
2084.0	Be	2	-	Md	2078.96	V	-	4	-	2073.70	Ir	4 wh	-	a
2083.94	Re	10	3	a	2078.88	Ir	-	25	a	2073.58	Pt	10	9	-
2083.85	Ir	15	5 h	a	2078.76	Ni II	1	12	-	2073.42	V	-	5 wh	-
2083.80	Hf II	40	30	Me	2078.68	Re	8	-	a	2073.39	Sb	5	[6]	Lg
2083.77	Ru	5	-	a	2078.652	Cu II	1	40	-	2073.30	Re	7	7	-
2083.75	Ni II	-	10	-	2078.53	Nd	-	10	a	2073.27	Co I	10	2	-
2083.70	W II	3	9	-	2078.49	Os	10	1	a	2073.2	Bi	10	-	Rk
2083.65	Yb	-	2	Me	2078.37	Ir	-	25	a	2073.04	Ca I	2	-	Sd
2083.643	Ni II	2	10	-	2078.35	W	6	25	-	2073.02	Ta	3	12	a
2083.58	Os	15	2	a	2078.21	Ta	8	-	a	2072.96	Ir	20	10	a

Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2072.89	Mn	9	6	a		2067.60	Re	5	5	a		2063.20	Os	5	5	a	
2072.85	Rh	—	20	a		2067.6	Hf	—	2	Md		2063.13	V	—	5	a	
2072.83	S	—	[8]	Lc		2067.5	Sb	—	[25]	Lg		2063.11	W	10	—	a	
2072.62	Re	6	10	a		2067.50	Pt I	20	25	a		2063.03	Ir	—	80	a	
2072.50	Cd	—	[2]	Bl		2067.40	Ta	6	12	a		2062.788	Se I	—	[800]	Rd	
2072.43	V	—	10	a		2067.21	Os	10	40	a		2062.78	Pt I	20	20	a	
2072.36	Rh	2	2	a		2067.2	K	—	[2]	MI		2062.77	W	5	—	a	
2072.29	Ir	4	2	a		2067.17	Ir	—	30	a		2062.56	Pd II	—	10	a	
2072.238	Ni I	10	—	—		2067.16	As I	12	1	Me		2062.54	Ir	2h	2	a	
2072.23	O II	—	[30]	Fl		2067.16	V	—	3 wh	—		2062.5	Tl	—	2 d	Cx	
2072.03	Pd II	—	25	—		2067.15	Xe	—	[2]	Dj		2062.49	Cu II	—	25	—	
2071.95	Lu	—	2	Me		2067.11	Os	3	—	—		2062.38	I	—	[900]	Lc	
2071.94	Ir	15	8	a		2067.08	Zr II	—	3	Ks		2062.341	Ni I	15	2	a	
2071.94	Rh	3	25	a		2066.98	Ir	4	—	—		2062.34	Cr	2	20	a	
2071.88	Pr	—	2	—		2066.92	Pt	15	7	—		2062.28	Ir	2	5	a	
2071.81	Ir	6	4	a		2066.90	Re	7	5	a		2062.16	Os	12	3	a	
2071.78	W	10	5	a		2066.83	V	—	4 wh	—		2062.15	Ta	4	—	a	
2071.76	Rh	—	20	a		2066.8	Tl	—	30	Cx		2062.05	W	—	8	a	
2071.553	Pt II	—	20	—		2066.78	Rh	—	12	a		2062.05	K	—	[5]	MI	
2071.39	Rh	—	12	a		2066.65	Hg	—	[2]	Dj		2062.04	Rh	—	20	a	
2071.28	Os	4	10	a		2066.49	Te	—	[30]	Lc		2062.0	In	—	12	Wb	
2071.21	W II	10	25	—		2066.48	S	—	[8]	Lc		2061.99	Ir	4	2	a	
2071.1	Hf	—	6	Md		2066.47	V	—	3 wh	—		2061.99	I	—	2	a	
2071.08	Mo	6	20	a		2066.410	Ni II	2	25	—		2061.94	Ta	8	30 l	a	
2070.93	Pt I	18	20	—		2066.4	Tl	—	2 d	Cx		2061.92	Sb	8	—	Wt	
2070.9	Te	150	—	MI		2066.35	Os	2	—	a		2061.91	Zn II	100	100	Ps	
2070.81	W	5	—	a		2066.32	Cu II	—	20	—		2061.91	Pd	—	12	—	
2070.78	V	—	5	—		2066.21	Ir	—	40	a		2061.9	Ga	—	3 h	Wb	
2070.67	Os	15	35	a		2066.20	Hf	2	—	Me		2061.86	Ir	2	5 wh	a	
2070.66	Lu	—	3 h	Me		2066.04	Cu	2h	—	—		2061.85	Zr II	—	4	Ks	
2070.6	alr	—	5	—		2066.00	Ir	4	—	a		2061.74	Pb	8 r	40	—	
2070.6	Ra II	—	[4]	Rs		2065.91	Ag II	4	80	—		2061.715	Pt II	—	5	Sh	
2070.51	Ir	6	60	a		2065.80	Os	5	2 w	a		2061.70	Bi I	300 R	100	To	
2070.42	Os	12	2	—		2065.79	Ir	—	80	—		2061.69	Os	20	6	a	
2070.36	Pt	2	—	Lv		2065.75	V II	—	25	—		2061.630	Pt II	—	25	—	
2070.21	Ir	2 w	5	a		2065.71	Cb	5	20	a		2061.49	Cr II	100	200	Ct	
2070.02	W	4	4	a		2065.70	Rh	—	25	a		2061.47	Ir	10	4	a	
2070.0	K	—	[5]	MI		2065.59	Ir	3	12	a		2061.45	Cb	2	12	a	
2069.96	Ta	2	10	a		2065.57	W II	10	20	—		2061.39	Hf	4	2	Me	
2069.93	Sn	—	2	m		2065.55	Hf II	2	4	Me		2061.35	Zr	—	3	Ks	
2069.92	Cu II	—	[2]	Sh		2065.53	Co II	10	35	—		2061.18	Si I	8	—	—	
2069.83	As I	18	3	Me		2065.48	Si	2	—	Fl		2061.17	Ag I	25	10 h	—	
2069.83	Ag I	10	3	—		2065.42	Cr II	50	150	—		2061.03	Te	5	—	Kh	
2069.75	Os	5	2	a		2065.42	Lu	—	30 h	Me		2061.0	Tl	—	2 d	Cx	
2069.70	Bi	2	—	To		2065.41	As I	20	3	Me		2060.98	Ta	2d	6	a	
2069.61	Os	25	4	a		2065.35	Zr II	—	2	Ks		2060.90	Ir	5	2	a	
2069.499	Ni I	20	2	—		2065.23	Rh	5	—	a		2060.75	Pt II	15	12	—	
2069.48	Ir	—	10	a		2065.20	Ge	4 R	50	—		2060.73	Ni I	5	—	—	
2069.44	Re	5	10	a		2065.18	Ir	3 w	—	a		2060.64	Ir	20	15	a	
2069.24	I	—	[20]	Lc		2065.09	W	10	3	a		2060.49	Hf II	7	—	Me	
2069.12	Ta	3	15	a		2065.09	Ir	—	25	a		2060.40	Os	10	—	a	
2069.07	Ir	10	8	a		2064.86	Co	4	—	To		2060.27	Cb	—	25	—	
2069.023	Ni	15	4	—		2064.79	Bi	50	4 h	—		2060.189	Ni I	10	2	a	
2068.99	Bi II	2	10	Rk		2064.78	Hf II	15	4	Me		2060.09	Ir	4	2 h	a	
2068.99	Co I	10	3	—		2064.77	Ca I	2	—	Sd		2060.08	Os	10	—	a	
2068.84	Hf	20	4 h	Me		2064.77	Ir	—	15	a		2059.895	Ni I	15 r	7	—	
2068.8	bh C	30	—	L		2064.77	Ta	3	12	a		2059.894	Pt II	—	25	Sh	
2068.80	V	—	25	—		2064.76	Re	7	—	a		2059.84	Ru	2	—	a	
2068.80	Pd I	12	—	—		2064.75	V	—	2	—		2059.79	Os	4	—	a	
2068.76	Hf II	3	—	Me		2064.55	Ir	5	5	a		2059.70	Ir	10	15	a	
2068.73	Ir	3 w	2 h	a		2064.43	Hf	2	—	Me		2059.68	Pt I	15	5	a	
2068.67	Pd	—	8	—		2064.38	Ir	4	—	Ks		2059.65	Os	10	4	—	
2068.65	Ge	5 r	200 R	—		2064.37	Zr	—	2	—		2059.63	Pb	500 wR	—	—	
2068.65	Er	5	—	a		2064.366	Ni I	15	2	—		2059.50	Os	3	—	a	
2068.629	Pt II	5	15	—		2064.3	Ga	—	2 h	Wb		2059.48	Rh	—	20	a	
2068.606	Ni I	10	—	—		2064.24	Os	4	—	a		2059.16	Rh	—	50	a	
2068.58	Hf	5	—	Me		2064.21	Cb	2	30	a		2059.08	Ta	6	25 l	a	
2068.53	V	—	8	—		2064.17	Rh	3	100	a		2058.973	Pt II	—	20	Sh	
2068.38	Os	10	10	a		2064.07	Pr	—	12	a		2058.93	Ir	4 w	—	a	
2068.38	Sb I	300 R	3	Wt		2063.99	N II	—	[15]	Fm		2058.85	Ta	4	4	a	
2068.35	Ni	2	—	—		2063.96	Mo	5	—	a		2058.81	Co II	10	40	—	
2068.32	Rh	8	—	a		2063.92	Re	6	6	a		2058.78	Os	10	3	a	
2068.3	Tl	—	2 d	Cx		2063.89	Zr II	—	3	Ks		2058.69	Os	10	4	Gt	
2068.30	Re	4 wh	—	a		2063.89	Ir	—	25	a		2058.59	Ge I	2	—	a	
2068.25	Ir	10	2	a		2063.79	Re	4	—	a		2058.59	Ta	5	8	a	
2068.160	Pt II	2	25	—		2063.76	Co II	12	35	—		2058.49	Hg	—	[10]	Dj	
2068.14	Rh	—	15	a		2063.67	W	—	3	—		2058.38	Pt	9	8	—	
2068.09	Zr II	—	2	Ks		2063.61	Zn II	2	20	Sd		2058.35	V II	—	15	—	
2067.94	Te	—	[15]	Lc		2063.59	Ir	5	15	a		2058.298	W II	8	8	—	
2067.93	S	—	[8]	Lc		2063.55	Os	25	2 w	a		2058.28	Er	6	—	a	
2067.90	Re	8	—	a		2063.50	N II	—	[15]	Fm		2058.15	Rh	3	15	a	
2067.87	W	2 wh	10	a		2063.44	Sb	30	12	Wt		2058.13	Si I	15	—	Ks	
2067.87	Ir	5	4 d	a		2063.39	Ni I	20	2	—		2058.05	Ir	—	10	a	
2067.71	Os	10	4	a		2063.37	Ir	12	4	a		2057.96	Zr II	2	2	Ks	
2067.63	Ge	2	—	Gt		2063.23	Hf II	3	—	Me		2057.93	Ir	10	4	a	

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Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R	Wave-length	Element	Intensity	Arc	Spk., [Dis.]	R
2057.85	Rh	6	6	a		2053.20	Rh	2	30	a		2046.93	Cr	—	2	h	—
2057.83	Ni II	—	10 s	—		2053.13	W II	8	8	—		2046.81	Os	5	5	a	—
2057.797	W	2 h	10	—		2053.1	K	—	[2]	MI		2046.68	Ir	3	2	h	—
2057.78	Ir	8	2	a		2053.1	Sb	1	[8]	Lg		2046.48	Sb	3	2	—	Wt
2057.76	Pd I	3	—	Sh		2052.929	Hg II	—	[100]	Ps		2046.28	Os	3	10	a	—
2057.71	Rh	—	12	a		2052.87	Pr	—	12	a		2046.22	Cd	—	[3]	—	Tk
2057.68	Bi I	40	4 h	To		2052.84	Rh	—	10	a		2046.19	Rh	—	20	a	—
2057.63	Ir	2	15	a		2052.78	Os	3	5	a		2046.19	Ta	5	10	a	—
2057.60	Ta	2	12	a		2052.70	Xe	—	[2]	Dj		2046.18	Ir	—	3	—	—
2057.51	Zn II	—	[20]	Vs		2052.57	Rh	—	20	a		2045.97	V	5	12	—	—
2057.48	Os	6	—	a		2052.53	O	—	[15]	Mh		2045.88	Ir	5	15	a	—
2057.42	Pd	5	—	—		2052.428	Ni I	6	—	—		2045.86	Rh	2	2	a	—
2057.39	Hf II	3	—	Me		2052.40	Os	10	2	a		2045.78	Re	7	—	a	—
2057.37	Ni II	2	20	—		2052.38	V	—	3	—		2045.7	K	—	[2]	—	MI
2057.36	V II	—	8	—		2052.22	Ir	12	9	a		2045.68	Rh	—	20	a	—
2057.23	Ge	3 r	—	—		2052.15	W	—	8	—		2045.62	Pd II	—	100	—	—
2057.23	Ir	6	50	a		2052.06	Ni I	12 d	6	—		2045.59	Mo	7	—	a	—
2057.20	V II	—	4	—		2051.89	W	1	—	—		2045.58	Pd	—	25	—	—
2057.18	Rh	—	15	a		2051.78	V	—	10 h	—		2045.56	W	—	3	—	—
2057.14	Re	3	2 h	a		2051.7	Hf	—	2	Md		2045.48	Ir	10	8	a	—
2057.05	Cb	4	35	a		2051.29	V	—	2 h	—		2045.47	Mo	2	12	a	—
2057.04	Rh	—	9	a		2051.25	Rh	2	100	a		2045.41	O	—	[25]	—	Mh
2057.01	Ir	3 w	4	—		2051.21	Zr II	—	3	Ks		2045.37	Ta	3	2	—	—
2057.003	Pt II	8	30	Sh		2051.16	Ir	10	50	—		2045.36	Os	50	20	a	—
2056.87	V	—	4	—		2050.827	Ni I	15	2	—		2045.33	Rh	—	25	a	—
2056.73	Ir	3	—	a		2050.74	Co II	—	4	—		2045.31	Ir	10	3	a	—
2056.53	V	—	5 wh	—		2050.72	Ir	5	1	a		2045.2	Hf	—	2	—	Md
2056.52	Ir	4 w	—	—		2050.61	Os	3 h	2 h	a		2044.99	Xe	—	[2 h]	—	Dj
2056.52	Be I	100	—	Ps		2050.58	W	—	3	—		2044.93	Fe	1 h	5	—	—
2056.40	Ir	2	—	a		2050.49	Ir	5	—	a		2044.89	Os	12	3	a	—
2056.33	Re	8	2 h	a		2050.43	Se I	—	[12]	Rd		2044.83	Ir	4	75	—	—
2056.17	Ir	—	20	a		2050.40	W	2 h	10	a		2044.76	Os	5	—	a	—
2056.06	Re	2	7	a		2050.22	Ir	—	25	—		2044.65	Ta	5	10	a	—
2056.057	Pt II	—	12	Sh		2050.06	Ti	5	—	a		2044.56	Sb	5	5	Wt	—
2056.02	W II	5	10	—		2049.97	Rh	2	3	a		2044.41	Cb	2	4	a	—
2056.0	Be	—	6	Md		2049.95	Os	6	2	a		2044.39	Ni	2	—	—	—
2055.72	Ir	15	25	a		2049.87	Cb	2	40	—		2044.36	Os	3	5	a	—
2055.56	V II	—	2 w	—		2049.83	Pt I	10	9	—		2044.22	Cb	3	18	a	—
2055.53	Os	5	20	a		2049.8	K	—	[5]	MI		2044.22	Te	—	[5]	—	Lc
2055.52	Cr II	100	300	Ct		2049.69	Bi	25	20	To		2044.19	Ir	10	100	—	—
2055.49	Ta	3	—	a		2049.63	W	8	9	—		2044.12	Cb	3	4	a	—
2055.49	Pd	—	12	—		2049.6	Hf	—	4	Md		2044.07	Rh	2 h	10	a	—
2055.461	Ni I	10	2	—		2049.56	Ir	2	30	—		2044.03	Ir	18	—	—	—
2055.44	Ir	10	4	a		2049.51	Ta	4	a	—		2043.8	Hg	—	[10]	—	Dj
2055.42	Zr	—	2	Ks		2049.46	Sb	15	15	Wt		2043.80	Pd II	2	15	—	—
2055.40	Os	3	5	a		2049.45	I	—	[150]	Lc		2043.787	Cu II	15	35	—	—
2055.31	Rh	2	40	a		2049.42	Os	15	5	a		2043.76	Ge	4 r	70 h	—	—
2055.30	Hf	4	—	Me		2049.39	Ru	2	—	a		2043.73	W	3	5	a	—
2055.27	Re	4	10	a		2049.373	Pt I	20	25 r	—		2043.68	Os	8	—	a	—
2054.99	Rh	3	3	a		2049.36	Mo	4 wh	—	a		2043.55	W	6	12	a	—
2054.966	Cu II	15	35	—		2049.35	V	—	2 h	—		2043.52	Cb	2	25	a	—
2054.9	K	—	[18]	MI		2049.17	Co II	3	10	—		2043.50	Os	10	—	a	—
2054.86	Hf	2	—	Me		2049.168	Pt II	—	25	—		2043.40	Xe	—	[2]	—	Dj
2054.85	Os	10	2	a		2049.15	Pb I	8 s	—	—		2043.36	Mo	4	2 h	a	—
2054.85	Si	3	—	FI		2049.11	V	—	2 h	—		2043.23	Ti II	1	3	—	—
2054.84	V	10	15	—		2049.11	Re	30 r	7	a		2043.21	Ir	10	2	a	—
2054.77	Ir	2	30	a		2049.02	W	6	7	a		2043.18	Os	4	—	a	—
2054.678	W II	9	20	—		2048.95	Rh	—	5	a		2043.16	Cb	3	25	a	—
2054.61	Hg	—	[20]	Dj		2048.82	Ir	3	—	a		2043.14	Ta	4	18	a	—
2054.60	Os	3	—	a		2048.80	Os	6	25	a		2043.13	V	4	—	—	—
2054.53	Ti II	4	15	—		2048.73	V	—	3	—		2043.1	K	—	[2]	—	MI
2054.47	I	—	[20]	Lc		2048.65	Rh	—	200	a		2043.10	Cr	8	—	a	—
2054.45	Ge	4	—	—		2048.62	Os	5	—	a		2043.00	Co	8	—	a	—
2054.43	Pd	—	30	—		2048.55	Ir	—	10	a		2043.00	Os	3	15	a	—
2054.41	Cu II	3 r	20 r	—		2048.39	Al II	—	[3]	Sy		2042.98	Pd	5	—	—	—
2054.37	Rh	3	25	a		2048.31	Rh	5	—	a		2042.96	Ir	4	10	a	—
2054.36	I	—	[20]	Lc		2048.30	Ni	2	—	—		2042.75	Os	5	—	a	—
2054.36	Se I	—	[8]	Rd		2048.28	Os	25	5	a		2042.67	Re	3	10	a	—
2054.32	Ni II	—	25	—		2048.04	Rh	—	9	a		2042.61	Ta	3	8	a	—
2054.3	Hf	—	6	Md		2048.04	W II	7	12	—		2042.46	Rh	—	15	a	—
2054.30	Cu II	—	8 wh	—		2048.02	Os	4	—	a		2042.45	Xe	—	[2 h]	—	Dj
2054.26	Re	6	—	a		2047.96	Ir	3	10	a		2042.44	Os	6	2	a	—
2054.07	Co	10	—	a		2047.77	Os	5	—	a		2042.32	Rh	2	30	a	—
2054.04	Sb	30	5	Wt		2047.74	Ir	3	—	a		2042.18	Hg	—	[10]	—	Dj
2053.90	Ni I	7	1	—		2047.73	Ta	2	5	a		2042.13	Ir	12	—	a	—
2053.87	Ir	2	25	a		2047.65	Cu II	—	10 r	Sh		2042.05	Os	—	[20]	—	Lc
2053.84	Os	6	5	a		2047.59	As I	25	3	Me		2041.96	Bi	100	15	To	—
2053.72	Ir	4	—	—		2047.57	Ir	5	1 h	a		2041.86	Cr	—	12	—	—
2053.7	Hf	—	2	Md		2047.5	bh C	30	—	L		2041.72	Rh	—	25	a	—
2053.65	Xe	—	[7]	Dj		2047.50	Cb	2	2	a		2041.69	Ge	5 r	150 r	—	—
2053.61	Rh	—	35	a		2047.41	Ta	6	18	a		2041.69	Ir	2	50	—	—
2053.52	Bi	2 h	—	To		2047.333	Ni I	12	7	—		2041.570	Pt II	2	30	—	—
2053.32	Pb I	—	12	—		2047.22	Ir	6	4 h	a		2041.46	Ti II	4	12	—	—
2053.290	Ni II	3	25	—		2047.09	W	5	12	a		2041.45	Pt	10	—	—	—
2053.2	Sr	—	[3]	Sd		2046.96	Re	3	2	a		2041.45	Mo	2	30	a	—

Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R	Wave-length	Element	Intensity	Spk., [Dis.]	R
2041.2	Sn	10	-	MI	2036.59	Co II	8	30	-	2031.4	Hf	-	2	Md
2041.17	Ir	2	-	-	2036.51	Sb	8	4	Wt	2031.37	V	-	4 h	-
2041.139	Ni I	10	-	-	2036.49	Os	9	3	a	2031.26	Ir	1	5 w	a
2041.04	Rh	-	40	a	2036.463	Pt II	15	40	-	2031.05	Re	5	3	a
2041.03	Re	4	-	a	2036.27	Rh	-	25	a	2031.023	Cu II	2	35	Sh
2041.02	V	8	-	-	2036.26	Re	3	6	a	2030.92	Re	8	4	a
2040.9	As	-	3	Lg	2036.24	Hf II	3	-	Me	2030.88	Rh	-	20	a
2040.9	Ga	-	3 h	Wb	2036.21	Mo	3	-	a	2030.73	Zr II	1	6	Ks
2040.865	W	5	12	-	2036.21	Sb	-	[2]	Lg	2030.68	Ir	2 h	5	a
2040.84	Re	6	7	a	2036.13	Ir	2	9	a	2030.63	Pt	15	25	-
2040.76	Ir	6	20	a	2036.11	Xe	-	[2]	Dj	2030.30	Ir	3	10	a
2040.68	Os	10	4	a	2036.02	Re	4 wh	-	a	2030.19	Os	6	-	a
2040.62	Ta	2	8	a	2036.00	Ir	2 h	8	a	2030.18	Rh	1	4	a
2040.48	Ir	2	5 w	-	2035.93	Os	15	4	a	2029.983	W II	10	30	-
2040.44	Cd II	-	[3]	Tk	2035.89	W II	8	20	-	2029.94	Cu II	3	15 wh	-
2040.35	Xe	-	[2]	Dj	2035.843	Cu II	12	30	-	2029.91	Zr	2	2	-
2040.33	Pt	15	15	-	2035.78	Pt	15	15	-	2029.90	Rh	3 h	35	a
2040.2	Ga	-	5 h	Wb	2035.58	Ir	10	4	a	2029.88	Hf II	5	4	Me
2040.19	Rh	2	100	a	2035.57	Mo	3	-	a	2029.88	Ir	8 w	-	a
2040.18	Pd	8 d	-	-	2035.52	Re	4	6	a	2029.83	Ni	5	-	-
2040.11	Zr	2 h	1 h	Ks	2035.4	Hf	-	2	Md	2029.74	Ir	-	5 d	a
2040.00	Zn II	-	[250]	Vs	2035.39	Ir	6	3 w	a	2029.70	Zn II	-	[2]	Vs
2039.93	Al II	-	[15]	Sy	2035.35	Ni II	-	10	-	2029.64	Ir	-	5 d	a
2039.91	Re	3	9	a	2035.08	Ni I	10 h	-	-	2029.46	Hg	-	[8]	Dj
2039.851	Se I	-	[1000]	Rd	2035.07	V	-	12	-	2029.32	Cb	10	50	a
2039.83	Pd I	4	-	-	2035.03	W	6	12	-	2029.3	Hf	-	2	Md
2039.80	W	-	10	-	2045.02	N	-	[5]	Fm	2029.27	Sb	1	12	Wt
2039.79	Te	300	-	Kh	2035.0	bh C	12	-	Lc	2029.251	Ni I	10	-	-
2039.79	Ir	8	40	a	2034.86	I	-	[100]	-	2029.20	Ir	4	8	a
2039.70	Pt	12	20	-	2034.85	Ni I	6 h	2	-	2029.19	Ni II	-	25	-
2039.67	Rh	-	25	a	2034.8	Sn	-	5	Lg	2029.18	Os	5	1	a
2039.60	Sb	15	15	Wt	2034.80	Ir	10	2 h	a	2029.118	W	3	12	-
2039.57	Pt	5	-	-	2034.63	Rh	-	20	a	2029.03	Rh	1	10	a
2039.5	Sn	-	200	Lg	2034.60	Ir	-	3 wd	-	2028.90	Cr	-	2 h	-
2039.43	Ir	25	12	a	2034.44	Os	30	5	a	2028.87	As I	2	-	Me
2039.38	W	4	3	a	2034.397	Ni I	15	2	-	2028.87	V	-	2	-
2039.35	Rh	-	30	a	2034.29	Os	5	3 w	a	2028.87	Ta	6	-	a
2039.31	Cr	25 h	-	-	2034.09	Rh	1	10	a	2028.86	Cd II	-	[5]	Tk
2039.31	V	-	15	-	2034.066	V	10	2	-	2028.65	Ir	5	50	-
2039.24	Xe	-	[3]	Dj	2034.01	Ir	-	30	a	2028.58	Pt I	10	8	-
2039.23	Re	18	-	a	2033.96	W	2	6	-	2028.47	Rh	1	25	a
2039.14	Ir	5	5	a	2033.931	Ag II	-	25	-	2028.451	V	6	-	Me
2039.11	W	4	7	-	2033.81	Re	8	5	a	2028.38	Rh	1 h	4	a
2039.08	Hf	6	-	Me	2033.59	Rh	4	20	a	2028.31	Pt	12	5	a
2039.073	V	-	2 h	-	2033.57	Ir	20	7 d	a	2028.23	Os	20	5	a
2039.01	Re	18	-	a	2033.56	Cb	2	4	a	2028.18	Hf II	25	15	Me
2039.0	Ga	-	5 h	Wb	2033.538	Ni I	8	-	-	2028.14	Mo	2 h	10	a
2038.99	Ir	1	25	a	2033.53	Os	10	25	a	2027.95	Re	6	-	a
2038.93	Pd	-	20	-	2033.50	V	-	2	-	2027.92	Ir	2	25	a
2038.872	V	10 w	2 h	Me	2033.489	P I	15	[20]	Ri	2027.90	W	3	3	a
2038.75	Ni I	2 h	3	-	2033.45	Ni II	-	5	-	2027.8	K	-	[2]	MI
2038.72	Os	15	5	a	2033.34	Rh	-	8	a	2027.80	Rh	1	25	a
2038.678	Co	-	9	-	2033.3	Be I	10	-	Ps	2027.78	Ir	12	5	a
2038.60	Ir	-	20	a	2033.231	W	-	7	-	2027.617	V	-	2 wh	a
2038.490	V	4	12	Me	2038.03	Cd	-	[20]	Tk	2027.45	Os	10	2	a
2038.44	Mo	20	-	a	2032.95	Re	10	-	a	2027.305	W	6	10	-
2038.31	Xe	-	[2]	Dj	2032.93	Ir	3 w	4	a	2027.3	Sb	-	[4]	Lg
2038.16	Os	4	-	-	2032.73	Os	12	3	a	2027.26	Ir	2	10	a
2038.11	Ir	-	30	a	2032.728	Co	2	18	-	2027.24	Pt	3	3	-
2038.06	Ta	3	12	a	2032.66	Ir	4 w	-	a	2027.18	Cu II	-	15	-
2038.01	Mo	2	20	a	2032.64	Re	2 h	8	a	2027.16	Xe	-	[4]	Dj
2038.00	Cr	-	3	-	2032.6	Be	-	2	Md	2027.027	W	5	12	-
2037.98	Re	4	-	a	2032.51	Rh	2	3	a	2027.02	Co II	15	50	-
2037.98	I II	-	[2]	Mu	2032.51	Os	5	1	a	2026.971	Hg II	-	[100]	Ps
2037.94	Cb	3	25	a	2032.46	Cb	-	25 w	-	2026.92	Ta	2	-	-
2037.906	W	4	12	-	2032.447	P I	12	[15]	Ri	2026.75	Mo	-	12	a
2037.87	U	3	2	a	2032.41	Pt	20	25	-	2026.69	Pd	-	25	-
2037.85	V	-	12	-	2032.39	Os	5	3	a	2026.63	Ni I	10	5 h	-
2037.85	Rh	4	-	a	2032.39	Ta	2	10	a	2026.61	Zr II	-	3	Ks
2037.68	Mo	2	20	a	2032.30	Ni II	2	25	-	2026.54	Os	5	1	a
2037.62	Os	2	5 w	a	2032.28	V I	5	-	-	2026.51	Se	-	[4]	Ro
2037.62	Hg	-	[3]	Dj	2032.12	Ir	8 d	10	a	2026.36	Ni	8	-	-
2037.60	Rh	-	50	a	2032.05	Mo	2 h	12	a	2026.2	bh C	25	-	Cx
2037.584	W	3	18	-	2032.02	Pd	-	30	-	2026.2	Tl	-	2 d	Vs
2037.51	V	-	6	-	2031.97	Re	5	10	a	2026.19	Zn II	-	[2]	-
2037.33	Ir	3	8 d	-	2031.948	Co	-	9	-	2026.17	Rh	1 h	3	a
2037.32	Hf II	2	2	Me	2031.93	Ta	4	-	a	2026.16	Os	5	-	a
2037.17	Re	8	7	a	2031.92	Xe	-	[3]	Dj	2026.10	Ir	4 w	-	a
2037.117	Cu II	12	30	-	2031.8	bh C	2	-	L	2026.08	W II	7	25	-
2037.05	Rh	-	30	a	2031.67	Re	5	-	a	2025.96	Ir	-	25	a
2036.97	Cu II	-	[40]	Sh	2031.52	Rh	1 h	5	a	2025.9	Hf	-	4	Md
2036.9	K	-	[40]	MI	2031.50	Ir	4	25	a	2025.86	Pt	10	3	Ps
2036.84	Ir	2	2 h	a	2031.452	W	6	5	-	2025.82	Mg I	8 h	-	-
2036.79	Cd II	-	[30]	Tk	2031.446	Pt II	-	20	-	2025.81	Ni	6	-	-
2036.70	Rh	-	80	a	2031.4	As	-	75	Lg	2025.75	Co II	10 l	30	-

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk.,	[Dis.] R			Arc	Spk.,	[Dis.] R			Arc	Spk.,	[Dis.] R
2025.69	Os	6	-	a	2020.52	Fe	2	100	a	2015.20	Rh	2	25	a
2025.53	U	2	3	a	2020.5	Bi	2	-	a	2015.16	Ir	6	-	a
2025.51	Zn II	200	200	Ps	2020.44	O II	-	[5]	Fl	2015.11	Mo	12	40	a
2025.49	Ir	4	10	a	2020.41	Ta	2	3	a	2015.10	V II	4	5	-
2025.475	Cu II	8	30	-	2020.33	Cd	-	[2]	Bl	2014.927	Pt II	5	30	-
2025.44	In	-	12	Wb	2020.30	Mo	20	50 r	a	2014.75	Ir	2	4	a
2025.38	Ni I	10 r	7	-	2020.27	O	-	[5]	Fl	2014.69	Re	7	-	a
2025.33	Zr II	1	4	Ks	2020.26	Os	25	10	a	2014.69	Sb	4	[5]	Wt
2025.33	Er	5	-	a	2020.13	W	8	2 h	a	2014.66	Ta	2	6	a
2025.31	Cb	10	30	a	2020.11	V	-	2	-	2014.58	Co	20 w	-	a
2025.159	Pt II	2	10	Sh	2020.07	Hf	3	4	Me	2014.45	Rh	-	12	a
2025.15	Rh	2	40	a	2020.04	Os	10	2	a	2014.43	W	5	12	a
2025.15	Cu	2	-	-	2019.87	Os	3	2	a	2014.43	Pb I	3	-	-
2025.13	Se	-	[4]	Ro	2019.80	Cb	4	15	a	2014.38	Ir	3	9 w	a
2025.12	Os	6	2	a	2019.79	Pd I	12	4	-	2014.36	Re	2 h	7	a
2024.93	Rh	3	25	a	2019.78	Ir	-	30	a	2014.232	W	6	12	-
2024.66	Zn II	-	[25]	Vs	2019.67	Re	6	-	a	2014.228	Ni I	15 r	10	-
2024.63	Pt	8	1	-	2019.6	K	-	[2]	MI	2014.20	Pd	-	30	-
2024.546	P I	12	[12]	Rt	2019.6	Ga	-	5 h	Wb	2014.19	V II	2	50	-
2024.49	Os	10	2	a	2019.57	W	2 h	8	a	2014.18	Ba II	-	[4]	Rs
2024.47	Ir	3	25	-	2019.54	Ta	4	18	a	2013.98	Pt	3	20	a
2024.43	Co	3	-	a	2019.54	Pd I	15	10	-	2013.96	Pd I	7	-	-
2024.33	Cu I	50 r	6	-	2019.49	V II	-	3	-	2013.86	Co	-	10	-
2024.20	Te	5	-	Kh	2019.40	Os	5	2	a	2013.83	Ir	3	5	a
2024.07	Ir	8	1 h	a	2019.30	Re	3 h	12	a	2013.81	Pd	-	30	-
2024.06	Sb	-	[5]	Lg	2019.13	Ir	-	10 d	a	2013.79	Xe	-	[2]	Dj
2024.02	Ta	2	12	a	2019.08	Os	2	5	a	2013.74	Rh	-	100	a
2023.99	Bi	50	-	To	2019.06	Ir	-	10 d	a	2013.65	Ta	2	4	a
2023.97	Ir	40	-	a	2019.05	Ge	2 R	-	-	2013.48	Re	4	2	a
2023.86	Sb	8	1	Wt	2019.04	Ni II	2	30	-	2013.42	Os	5	2	a
2023.82	Re	4	-	a	2018.87	V	-	2 h	-	2013.40	Rh	-	5	a
2023.80	I	-	[100]	Lc	2018.67	Cb	2	15	a	2013.38	Hf II	2	2	Me
2023.74	Rh	-	70	a	2018.55	Re	3	12	a	2013.32	As I	25 r	8	Me
2023.72	Os	10	2	a	2018.45	Rh	-	20	a	2013.24	Ir	10	9	a
2023.66	Re	10	50	a	2018.329	Pt II	5 w	25	-	2013.09	Os	5	3 w	a
2023.56	V II	-	40	-	2018.18	Rh	5	4	a	2013.07	W	5	7	a
2023.53	Pt	8	2	a	2018.14	Os	20	5	a	2012.96	Cu II	-	20	Sh
2023.48	Ir	3 w	1	a	2018.00	Os	5	3 w	a	2012.85	V	-	8	-
2023.471	P I	15	[12]	Rt	2017.99	Ir	2 h	40	a	2012.78	Hf II	10	4	Me
2023.36	Hf	2	-	Me	2017.88	Re	40	6	a	2012.77	As I	10	-	Me
2023.24	Ir	3	1	a	2017.79	Ir	3 w	-	a	2012.76	Re	9	2 h	a
2023.14	Re	7 wh	6	a	2017.77	Rh	-	10	a	2012.75	Ra II	-	[8]	Rs
2023.09	Os	5	-	a	2017.61	Cu II	4	2	-	2012.72	Rh	-	25	a
2022.83	Ir	4	50	-	2017.57	Ir	5 w	-	a	2012.71	Ir	5 wh	3	-
2022.82	I	-	[12]	Lc	2017.45	Rh	-	80	a	2012.66	Zr II	2 h	2 h	Ks
2022.80	Al II	-	[8]	Sy	2017.41	Ir	-	50	a	2012.65	V II	-	4	-
2022.76	Os	15	6	a	2017.34	Os	2	-	-	2012.62	Zn	-	[250]	Vs
2022.64	V	-	8 wh	-	2017.34	Pd	2 h	-	-	2012.6	Sb	-	2	Lg
2022.37	Rh	3	4	a	2017.32	V II	-	2	-	2012.58	Pt	9	6	a
2022.35	W	2 h	12	-	2017.32	Ir	2 h	3	-	2012.46	Os	4	-	a
2022.35	Ir	15	4	a	2017.28	Cb	3	25	a	2012.45	Cr	-	8	-
2022.34	Co II	18	75	-	2017.26	Co	4	-	a	2012.40	Ir	2 h	4	a
2022.24	Cu II	-	10	-	2017.13	Hg	-	[2]	Dj	2012.3	bh C	30	-	L
2022.20	Ir	-	12	-	2017.13	Os	2	7	a	2012.30	Tl II	-	2	-
2022.19	Hg	-	[30]	Dj	2017.07	Fe	2	10	a	2012.17	Ir	-	15	a
2022.16	Os	5	-	a	2016.912	Co	2	-	-	2012.12	Mn	-	30	a
2022.14	Cr	-	3	-	2016.91	Al II	-	[80]	Sy	2012.03	Zr	-	2	Ks
2022.07	Pb	5	12	-	2016.891	Pt II	-	20	Sh	2012.00	Au I	15	18	-
2022.048	W	4	15	-	2016.883	Cu II	2	20	-	2011.99	Cb	4	25	a
2022.0	Hf	-	2	Md	2016.71	Pt	8	8	-	2011.96	Ir	5	4	a
2021.83	V II	-	2 h	-	2016.62	Os	3	15	a	2011.56	V	3	-	a
2021.80	Se I	-	[8]	Rd	2016.60	O II	-	[5]	Fl	2011.50	Co	15	50	-
2021.72	Ta	5	-	a	2016.59	Re	10	6 wh	a	2011.39	Bi	2 h	-	To
2021.61	Os	1	2	a	2016.54	V II	-	25	-	2011.39	W	-	6	-
2021.6	Ga	-	3 h	Wb	2016.52	Zr	-	3	Ks	2011.31	Ge I	2 R	-	Gt
2021.51	Ir	-	50	a	2016.40	W	4	20	a	2011.3	Hf	-	2	Md
2021.46	Ir	1	3	a	2016.35	Ni I	5	-	-	2011.26	Ir	2 h	15	a
2021.45	Rh	-	8	a	2016.19	Re	9	-	-	2011.16	Cr	8	12	a
2021.44	W II	-	6	-	2016.05	Cb	5	15	a	2011.07	Re	3	5	a
2021.38	Au I	8	-	MI	2015.99	Co	4	-	-	2011.07	Co	5	-	a
2021.38	V	-	4 w	-	2015.98	Os	6	2	a	2011.04	Ir	4	8	a
2021.28	Os	8	-	a	2015.90	Ag II	-	25	-	2011.04	Pt	6	-	-
2021.28	Ni I	5	-	-	2015.90	Ir	10	5	a	2010.97	Si I	8	-	Ks
2021.21	Bi I	40 wh	15	To	2015.88	Zr II	-	2	Ks	2010.91	Ir	5	-	a
2021.18	Rh	-	10	a	2015.86	I	-	[12]	Lc	2010.74	W	3	2 h	a
2021.11	Re	4	-	a	2015.78	Os	8	5	a	2010.7	K	-	[5]	MI
2021.04	Xe	-	[4]	Dj	2015.78	W	6	20	a	2010.65	Ir	15	15	-
2020.97	Ni II	-	30	-	2015.77	V II	-	4	-	2010.5	Hf	-	2	Md
2020.92	Pt	2 h	-	-	2015.575	Cu II	-	50	-	2010.47	Rh	-	12	a
2020.90	Hg	-	[2]	Dj	2015.55	V	-	5	-	2010.23	W II	6	12	-
2020.85	V	-	6	-	2015.51	Re	3	-	a	2010.15	Os	10	4	a
2020.82	Ir	1	25	a	2015.48	Ir	2	10	a	2010.10	Co	8	-	a
2020.73	Ta	2	6	a	2015.47	W	6	10	a	2010.04	As I	10	-	Me
2020.6	Tl	-	2 d	Cx	2015.36	Os	5	2	a	2010.01	V	-	3 w	-
2020.56	V II	-	3	-	2015.30	Ir	-	25 w	a	2010.00	Cb	5	25	a

Wave-length	Element	Intensities			Wave-length	Element	Intensities			Wave-length	Element	Intensities		
		Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R			Arc	Spk., [Dis.]	R
2009.979	W	8	12	—	2006.09	W	2	4	a	2002.56	W II	—	2	Ln
2009.92	Re	3	15	a	2005.87	V	—	6	—	2002.54	As I	20 r	—	Me
2009.91	Ir	3 w	—	a	2005.87	Os	4	8	a	2002.27	Cu	—	3	Sh
2009.77	V	—	2	—	2005.86	Ir	3	35	—	2002.09	Cb	—	2	—
2009.76	Ir	3 w	20	—	2005.85	Rh	—	8	a	2002.0	Te I	50	—	MI
2009.65	Os	4	20	a	2005.61	Rh	—	10	a	2002.0	Hf	—	6	Md
2009.36	Ir	—	25	—	2005.57	Ir	4	7	a	2001.95	Mn	2	18	a
2009.35	Os	3	—	a	2005.37	Rh	—	10	a	2001.92	Ir	10	25	a
2009.34	V	—	2 wh	—	2005.24	Ir	5	—	a	2001.91	Hg	—	[10]	Dj
2009.32	Zn	—	[2]	Vs	2005.21	V II	—	2	—	2001.90	Zr II	—	2	Ks
2009.18	As I	50 r	8	Me	2005.12	Rh	—	25	a	2001.89	Os	15	2 w	a
2009.01	Ir	4 w	—	a	2005.03	Cb	5	25	a	2001.82	Ta	5	10	a
2008.91	W	6	—	a	2004.96	Cr	12	—	a	2001.817	Ni I	15	3	—
2008.75	Cb	—	2	—	2004.9	Ti	—	2 d	Cx	2001.80	Rh	2	5	a
2008.64	W	4	—	a	2004.85	Ir	6	7	a	2001.77	Er	5	—	a
2008.55	Hg	—	[10]	Dj	2004.84	Re	10	—	a	2001.706	W II	6	12	—
2008.45	Cb	4	20	a	2004.78	Os	10	—	a	2001.66	V	—	9	—
2008.43	Si I	3	—	Ks	2004.78	V II	—	50	—	2001.59	Bi	2 h	—	To
2008.29	Ir	—	15	a	2004.77	Sb	8	—	Wt	2001.59	Te	600	—	Kh
2008.28	Co	5	5	—	2004.76	Cb	4	20	—	2001.49	Re	5	9	a
2008.21	Pd II	—	25	—	2004.69	Re	4	20	a	2001.49	Pd	—	40	—
2008.10	Re	9	5	a	2004.65	Cd	—	[10]	Bl	2001.45	Os	10	3	a
2008.073	W	12	25	—	2004.57	Hg	—	[8]	Dj	2001.45	V II	—	12	—
2008.06	Cd II	—	[10]	Tk	2004.53	Ta	2	6	a	2001.43	Rh	—	25	a
2008.0	Hf	—	4	Md	2004.52	Ir	—	25	a	2001.30	S	—	[8]	Lc
2007.97	Os	5	4	a	2004.43	Re	5	—	a	2001.28	Cd	—	[3]	Tk
2007.90	Re	2 h	5	a	2004.35	Ir	5	—	a	2001.26	Os	3	—	a
2007.7	Ga	—	4 h	Wb	2004.335	Pt II	—	25	—	2001.23	Ir	—	10	a
2007.676	Ni I	9	3	—	2004.29	Ni II	—	30	—	2001.15	V	—	10	—
2007.65	V II	—	10	—	2004.13	Pt I	12	5	—	2001.09	Os	3	3	a
2007.55	Pt	—	7	a	2004.08	Ir	4	15	a	2000.78	Co II	4	12	—
2007.36	Pt	9	—	a	2003.92	Os	5	3	a	2000.78	V II	—	5	Me
2007.18	Ir	4	15	a	2003.91	Ta	2	6	a	2000.76	Rh	1	9	a
2006.996	Ni I	15	3	—	2003.82	Mn	50 r	25	a	2000.73	Hg	—	[2]	Dj
2006.97	Pd	20	8	—	2003.80	Pd	—	40	—	2000.73	Pd I	2	10	—
2006.92	W	5	—	a	2003.73	Os	5	10	a	2000.70	Ir	4	2 h	a
2006.87	V	2	40	—	2003.56	Ir	2	25	a	2000.684	Ag II	—	30	—
2006.8	K	—	[5]	MI	2003.56	Re	18	6	a	2000.56	Rh	—	10	a
2006.73	Ta	8	—	a	2003.53	Rh	—	10	a	2000.49	Re	2 h	7	a
2006.717	W	5	12	—	2003.51	Os	5	3	a	2000.46	Ni	10	2	—
2006.62	Ta	5	—	a	2003.39	Rh	—	7	a	2000.348	Cu II	6	7	Sh
2006.5	bh C	15	—	L	2003.34	As I	300 R	10 h	Me	2000.21	Mo	2	12	a
2006.44	Ir	12	2	a	2003.146	Pt II	5	15	Sh	2000.2	Te I	30	—	MI
2006.4	Ra II	—	[4]	Rs	2002.86	S	—	[10]	Lc	2000.14	V	—	10	Me
2006.16	Os	5	—	a	2002.72	Te	50	[3]	Kh	2000.04	Mo	10	—	a

Symbols Used in Wavelength Tables

(For author symbols in remarks column, see page xxiv)

a	new lines (not in literature), element assignments tentative	r	narrow self-reversal
bh	band head	R	wide self-reversal
d	double line	s	shaded or displaced to shorter wavelengths (asymmetrical)
h	hazy, diffuse, nebulous	S	international secondary standard
I	interferometer measurement, mean value, unless with author symbol	w	wide or complex
IS	international primary standard	W	very wide or complex
l	shaded or displaced to longer wavelengths (asymmetrical)	—	(in R column) M.I.T. measurement
L	literature value, for band heads	[]	discharge-tube intensity
m	mean value	I	Line classified as emitted by normal atom
		II	Line classified as emitted by singly ionized atom

